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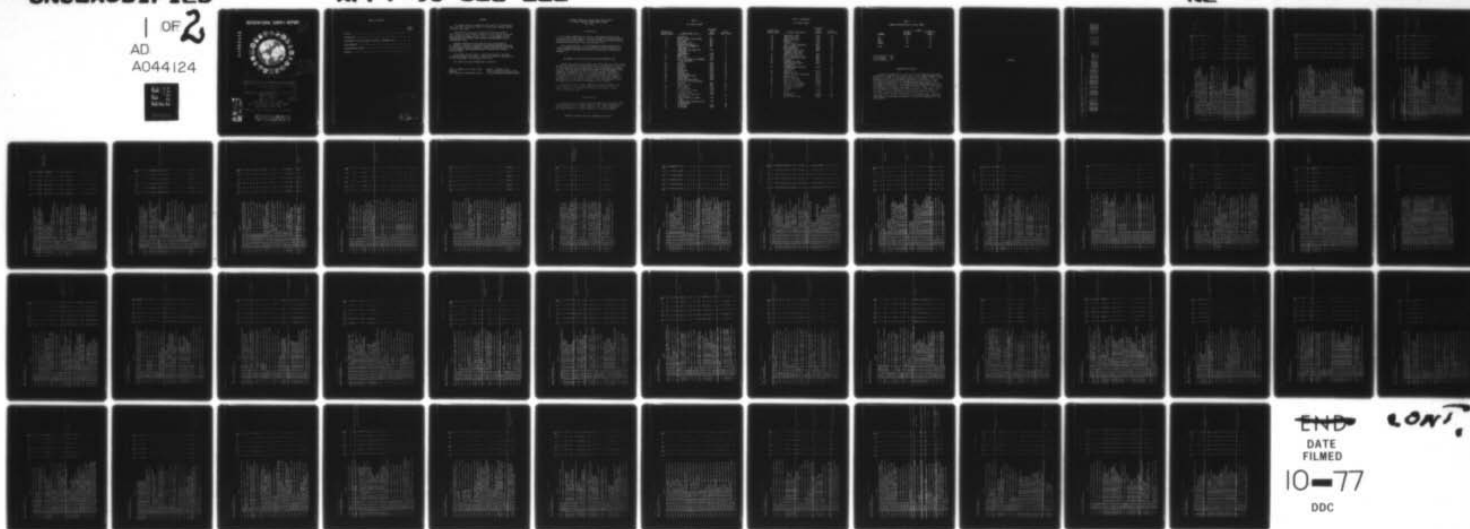
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ELECTRONIC PRINCIPLES OCCUPATIONAL SURVEY REPORT, ELECTRONIC WA--ETC(U)
JUL 77

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OCCUPATIONAL SURVEY REPORT.

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9 Rept. for Oct 76 - Jan 77.

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ELECTRONIC PRINCIPLES OCCUPATIONAL SURVEY REPORT
ELECTRONIC WARFARE SYSTEMS
CAREER LADDER
AFSC 328X3.

14 AFPT-96-328-222

11 29 JUL 1977

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OCCUPATIONAL SURVEY BRANCH
USAF OCCUPATIONAL MEASUREMENT CENTER
LACKLAND AFB TEXAS 78236

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PREFACE

This report presents a summary of the results of a detailed Air Force Electronic Principles Survey of the Electronic Warfare Systems Specialty, AFSC 328X3.

The Electronic Principles Inventory (EPI) was developed by Major Thomas J. O'Connor and Mr. Hendrick W. Ruck and the survey data were analyzed by Captain David S. Street. All are members of the Occupational Survey Branch, USAF Occupational Measurement Center, Lackland AFB, Texas.

Computer programs for analyzing the data were designed by Dr. Raymond E. Christal, Occupational and Manpower Research Division, Air Force Human Resources Laboratory (AFHRL), and were written by the Project Analysis and Programming Branch, Computational Sciences Division, AFHRL.

Distribution of this report is made upon request to the USAF Occupational Measurement Center, attention of the Chief, Occupational Survey Branch (OMY), Lackland AFB, Texas 78236.

This report has been reviewed and is approved.

JAMES A. TURNER, JR., Colonel, USAF
Commander
USAF Occupational Measurement Center

WALTER E. DRISKILL, Ph.D.
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USAF Occupational Measurement Center

ELECTRONIC PRINCIPLES OCCUPATIONAL SURVEY REPORT
ELECTRONIC WARFARE SYSTEMS CAREER LADDER
AFSC 328X3

INTRODUCTION

➤ This report summarizes the results of the administration of the Electronic Principles Inventory to airmen assigned to Electronic Warfare Systems Specialty (AFSC 328X3). The data for this report were collected during the period October 1976 through January 1977.

This report describes: (1) development and administration of the survey instrument; and (2) electronic principles used by DAFSC 5-skill level personnel both CONUS and overseas and assigned to selected major commands. ↑

DEVELOPMENT OF THE ELECTRONIC PRINCIPLES INVENTORY (EPI)

The EPI was developed by personnel from the Occupational Survey Branch who were well qualified in theoretical physics and electronics, as well as in task analysis and survey development. Over 300 maintenance personnel from SAC, TAC, ADC, MAC, and AFCS participated in the development of the inventory. Representing the five ATC training centers, electronics experts who averaged 12 years of maintenance experience and four years of electronic principles instruction experience spent several weeks refining the EPI. In addition, personnel at the Electrical Engineering Department of the USAF Academy and the Air Force Human Resources Laboratory were consulted during the development of the inventory.

The final version of the EPI used in this survey contained 1,257 items in 62 subject matter areas covering all electronic principles training given at the five ATC technical training centers. Table 1 lists the 62 subject areas.

ADMINISTRATION

The Electronic Principles Inventory was administered by mail to AFSC 32853 airmen worldwide. Responses from 422 individuals represented 25 percent of the total of all AFSC 32853 personnel. Table 2 shows the percentage distribution by major command of the survey incumbents.

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TABLE 1
EPI SUBJECT AREAS

<u>SEQUENCE OF SUBJECT AREAS</u>	<u>SUBJECT AREA TITLE</u>	<u>BEGINNING ITEM NUMBER</u>	<u>GPSUM PAGE NUMBER</u>
1	MATHEMATICS	A1	2
2	DIRECT CURRENT AND VOLTAGE	A15	2
3	RESISTANCE	A24	2
4	MULTIMETER USES	B52	3
5	ALTERNATING CURRENT	B61	4
6	INDUCTORS AND INDUCTIVE REACTANCE	B67	4
7	CAPACITORS AND CAPACITIVE REACTANCE	C92	5
8	TRANSFORMERS	C128	6
9	MAGNETISM	C171	7
10	RCL CIRCUITS	D185	8
11	SERIES AND PARALLEL RESONANCE (TIME CONSTANTS)	D229	9
12	FILTERS	D239	10
13	COUPLING	E261	11
14	SOLDERING	E273	12
15	RELAYS	E294	12
16	MICROPHONES	F314	13
17	SPEAKERS	F327	13
18	OSCILLOSCOPES	F342	13
19	SEMICONDUCTOR DIODES	G354	14
20	TRANSISTORS	G404	16
21	TRANSISTOR AMPLIFIERS	G428	17
22	SOLID-STATE SPECIAL PURPOSE DEVICES	H477	19
23	POWER SUPPLIES	H483	19
24	OSCILLATORS	H512	20
25	MULTIVIBRATORS	I539	21
26	LIMITERS AND CLAMPERS	I555	21
27	ELECTRON TUBES	I565	21
28	ELECTRON TUBE AMPLIFIERS AND CIRCUITS	J609	23
29	SPECIAL PURPOSE ELECTRON TUBES	J616	23
30	HETERODYNING, MODULATION, AND DEMODULATION	J632	24
31	AM SYSTEMS	K638	24
32	FM SYSTEMS	K666	25

TABLE 1 (CONTINUED)

EPI SUBJECT AREAS

<u>SEQUENCE OF SUBJECT AREAS</u>	<u>SUBJECT AREA TITLE</u>	<u>BEGINNING ITEM NUMBER-</u>	<u>GPSUM PAGE NUMBER</u>
33	NUMBERING SYSTEMS	K685	25
34	LOGIC FUNCTIONS	L695	26
35	BOOLEAN EQUATIONS	L708	26
36	COUNTERS	L733	27
37	TIMING CIRCUITS	M757	28
38	USE OF SIGNAL GENERATORS	M769	28
39	METER MOVEMENTS	M779	29
40	METER MOVEMENTS	N808	29
41	SATURABLE REACTORS AND MAGNETIC AMPLIFIERS	N818	30
42	WAVESHAPING CIRCUITS	N834	30
43	SINGLE SIDEBAND SYSTEMS	0845	31
44	PULSE MODULATION SYSTEMS	0875	32
45	ANTENNAS	0914	33
46	TRANSMISSION LINES	P953	34
47	WAVEGUIDES AND CAVITY RESONATORS	P984	36
48	MICROWAVE AMPLIFIERS AND OSCILLATORS	P1034	38
49	REGISTERS	Q1110	40
50	STORAGE DEVICES	Q1117	40
51	DIGITAL TO ANALOG CONVERTERS	Q1126	40
52	PHANTASTRONS	Q1140	41
53	SCHMITT TRIGGERS	R1141	41
54	CABLE FABRICATION	R1144	41
55	INPUT/OUTPUT DEVICES	S1146	41
56	PHOTO SENSITIVE DEVICES	S1149	41
57	SYNCHRONOUS VIBRATIONS (CHOPPER CIRCUITS)	S1150	41
58	INFRARED	T1159	42
59	LASERS	T1186	42
60	DISPLAY TUBES	T1220	43
61	PROGRAMMING	U1234	44
62	DB AND POWER RATIOS	U1255	44

TABLE 2
COMMAND REPRESENTATION OF SURVEY SAMPLE

<u>COMMAND</u>	32853	
	<u>PERCENT ASSIGNED</u>	<u>PERCENT OF SAMPLE</u>
SAC	33	42
TAC	27	36
USAFE	12	6
OTHERS	28	16
TOTAL	100	100

Total Assigned - 1,664
Total Sampled - 422
Percent Sampled - 25

PRESENTATION OF RESULTS

Personnel responded "yes" or "no" to the 1,257 electronic principles questions as related to their present job. A Group Summary (GPSUM) computer printout is provided in the Appendix portion of this report. Page 1 of the GPSUM lists the six selected groups identified for this report. Pages 2-45 show the percentage of the incumbents responding to the EPI items. The computer program results display the percent members answering "yes" to the subject area questions. The reader can locate a specific subject area by referring to the Appendix page number as listed in Table 1. For example, the Transformers area results are given on pages 6-7 of the GPSUM. The percentage of survey respondents indicating use of specific electronic principles ranged from high in areas such as Soldering (p. 13) or Oscilloscopes (pp. 14-15) to low in areas such as Lasers (pp. 43-44). Additional 32853 data can be obtained upon request to the Chief, Occupational Survey Branch (OMY).

APPENDIX A

TABULATION OF ELECTRONIC PRINCIPLES UTILIZATION DATA FOR SELECTED GROUPS
IN THE 328X3 CAREER FIELD.

REPORTS ON THE FOLLOWING GROUPS WERE REQUESTED

GROUP IDENTITY -	SPC001	ALL AIRMEN DAFSC 32853	STATIONED IN CONUS	CONTAINING	422 MEMBERS.
GROUP IDENTITY -	SPC002	ALL AIRMEN DAFSC 32853	STATIONED OVERSEAS	CONTAINING	361 MEMBERS.
GROUP IDENTITY -	SPC003	ALL AIRMEN DAFSC 32853	ASSIGNED TO SAC	CONTAINING	60 MEMBERS.
GROUP IDENTITY -	SPC004	ALL AIRMEN DAFSC 32853	ASSIGNED TO TAC	CONTAINING	176 MEMBERS.
GROUP IDENTITY -	SPC005	ALL AIRMEN DAFSC 32853	ASSIGNED TO USAF	CONTAINING	150 MEMBERS.
GROUP IDENTITY -	SPC006	ALL AIRMEN DAFSC 32853		CONTAINING	27 MEMBERS.

TASK GROUP SUMMARY

DY-TSK

[illegible]

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK

	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006
A 33 A3-10 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE THE OHMIC VALUE OF RESISTANCE.	67	68	60	63	75	85
A 34 A3-11 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE THE TOLERANCE OF RESISTORS.	55	57	40	55	59	48
A 35 A3-12 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE THE FAILURE RATE OF RESISTORS.	19	20	10	19	19	15
A 36 A3-13 DO YOU MAKE DECISIONS IN WHICH YOU MUST DETERMINE HOW TWO OR MORE BATTERIES MUST BE CONNECTED TOGETHER TO	18	18	18	18	17	19
A 37 A3-14 DO YOU USE OR REFER TO THE SCHEMATIC SYMBOLS WHICH REPRESENT ANY OF THE FOLLOWING COMPONENTS; BATTERY,	77	78	77	71	89	93
A 38 A3-15 DO YOU CALCULATE TOTAL RESISTANCE FOR SERIES RESISTIVE CIRCUITS.	36	37	25	36	41	22
A 39 A3-16 DO YOU CALCULATE TOTAL CURRENT FOR SERIES RESISTIVE CIRCUITS.	30	32	22	32	33	19
A 40 A3-17 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR SERIES RESISTIVE CIRCUITS.	35	37	23	35	41	26
A 41 A3-18 DO YOU CALCULATE POWER DISSIPATION FOR SERIES RESISTIVE CIRCUITS.	26	27	18	27	29	19
A 42 A3-19 DO YOU CALCULATE TOTAL RESISTANCE FOR SERIES PARALLEL RESISTIVE CIRCUITS.	34	35	23	34	38	22
A 43 A3-20 DO YOU CALCULATE TOTAL CURRENT FOR SERIES PARALLEL RESISTIVE CIRCUITS.	29	30	18	31	31	19
A 44 A3-21 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR SERIES PARALLEL RESISTIVE CIRCUITS.	31	33	20	32	35	22
A 45 A3-22 DO YOU CALCULATE INDIVIDUAL BRANCH CURRENTS FOR SERIES PARALLEL RESISTIVE CIRCUITS.	26	27	18	26	28	22
A 46 A3-23 DO YOU CALCULATE POWER DISSIPATION FOR SERIES PARALLEL RESISTIVE CIRCUITS.	25	26	17	26	27	19
A 47 A3-24 DO YOU CALCULATE TOTAL RESISTANCE FOR PARALLEL RESISTIVE CIRCUITS.	33	35	25	35	36	26
A 48 A3-25 DO YOU CALCULATE TOTAL CURRENT FOR PARALLEL RESISTIVE CIRCUITS.	28	29	20	30	29	22
A 49 A3-26 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR PARALLEL RESISTIVE CIRCUITS.	31	33	22	32	36	26
A 50 A3-27 DO YOU CALCULATE INDIVIDUAL BRANCH CURRENTS FOR PARALLEL RESISTIVE CIRCUITS.	24	26	15	24	28	19
A 51 A3-28 DO YOU CALCULATE POWER DISSIPATION FOR PARALLEL RESISTIVE CIRCUITS.	23	24	13	24	25	15
B 52 B1-01 DO YOU MEASURE RESISTANCE.	87	86	93	82	93	96
B 53 B1-02 DO YOU REPAIR AN OHMMETER.	5	6	2	5	7	4
B 54 B1-03 DO YOU MEASURE VOLTAGE.	89	87	97	83	94	100
B 55 B1-04 DO YOU REPAIR A VOLTMETER.	4	4	2	4	3	4
B 56 B1-05 DO YOU REPAIR AN AMPHETER.	4	4	2	3	5	4
B 57 B1-06 DO YOU MEASURE CURRENT.	70	71	63	69	79	67
B 58 B1-07 DO YOU USE A MULTIMETER.	91	90	95	86	95	96

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK

B 59	B1-08	DO YOU DIRECTLY USE A QUANTITY OF CHARGE CALLED A COULOMB.	3	4	2	2	4	0	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006
B 60	B1-09	DO YOU READ SCHEMATICS.	87	87	92	84	93	96						
B 61	B2-01	DO YOU USE OR REFER THE TERM EFFECTIVE VOLTAGE (RMS).	57	59	45	55	63	48						
B 62	B2-02	DO YOU USE OR REFER THE TERM PEAK TO PEAK VOLTAGE.	67	67	65	61	78	78						
B 63	B2-03	DO YOU USE OR REFER THE TERM AVERAGE VOLTAGE (DC).	66	64	65	61	76	74						
B 64	B2-04	DO YOU USE OR REFER THE TERM WAVE LENGTH.	50	52	38	49	61	41						
B 65	B2-05	DO YOU USE OR REFER THE TERM FREQUENCY.	82	83	72	82	90	85						
B 66	B2-06	DO YOU USE OR REFER THE TERM INSTANTANEOUS VALUE.	27	28	27	27	29	30						
B 67	B3-01	DO YOU WORK WITH INDUCTORS OR CIRCUITS CONTAINING INDUCTORS, CHOKES, OR CHOK COILS IN YOUR PRESENT JOB.	52	54	40	50	61	52						
B 68	B3-02	DO YOU INSPECT INDUCTORS.	46	49	30	45	53	41						
B 69	B3-03	DO YOU CLEAN INDUCTORS.	35	38	18	36	37	30						
B 70	B3-04	DO YOU ADJUST INDUCTORS.	36	39	15	40	35	15						
B 71	B3-05	DO YOU REMOVE OR REPLACE INDUCTORS.	46	49	32	43	54	44						
B 72	B3-06	DO YOU USE OR REFER TO INDUCTANCE.	39	42	18	39	46	28						
B 73	B3-07	DO YOU USE OR REFER TO HENRIES.	27	29	15	26	31	15						
B 74	B3-08	DO YOU USE OR REFER TO INDUCTIVE REACTANCE.	28	29	17	28	31	22						
B 75	B3-09	DO YOU USE OR REFER TO COPPER LOSS IN INDUCTORS.	8	9	5	6	11	11						
B 76	B3-10	DO YOU USE OR REFER TO HYSTERESIS LOSS IN INDUCTORS.	8	9	5	8	9	11						
B 77	B3-11	DO YOU USE OR REFER TO EDDY CURRENT LOSS IN INDUCTORS.	8	9	7	6	11	15						
B 78	B3-12	DO YOU USE OR REFER TO THE GENERAL RULE THAT INDUCTANCE IS PROPORTIONAL TO THE SQUARE OF THE	9	9	7	9	9	11						
B 79	B3-13	DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE OF A COIL IS DIRECTLY PROPORTIONAL TO THE	8	8	5	7	8	7						
B 80	B3-14	DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE OF A COIL IS INVERSELY PROPORTIONAL TO	7	7	5	6	8	7						
B 81	B3-15	DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE OF A COIL IS DIRECTLY PROPORTIONAL TO THE	6	7	3	6	7	4						
B 82	B3-16	DO YOU CALCULATE INDUCTANCE FOR A PARTICULAR INDUCTOR USING FORMULAS.	7	7	5	7	9	7						
B 83	B3-17	DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTORS IN SERIES.	9	9	7	6	11	11						
B 84	B3-18	DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTORS IN PARALLEL.	9	9	8	6	11	15						
B 85	B3-19	DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTORS IN SERIES-PARALLEL CIRCUITS.	9	9	7	6	10	11						
B 86	B3-20	DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT LAGS VOLTAGE IN AC INDUCTOR CIRCUITS.	17	19	7	17	20	7						
B 87	B3-21	DO YOU CALCULATE INDUCTIVE REACTANCE.	9	8	10	7	9	11						

ALTERNATING CURRENT

INDUCTORS AND
INDUCTIVE REACTANCE

TASK GROUP SUMMARY

[illegible]

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006
C 118 C1-27 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT LEADS VOLTAGE IN AC CAPACITOR CIRCUITS.	18	19	9	16	23	7
C 119 C1-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT CAPACITIVE REACTANCE IS INVERSELY PROPORTIONAL TO CAPACITIVE REACTANCE.	15	15	13	11	19	19
C 120 C1-29 DO YOU CALCULATE CAPACITIVE REACTANCE.	10	10	8	8	12	7
C 121 C1-30 DO YOU WORK WITH MOTOR-STATOR CAPACITORS (VARIABLE).	32	35	13	38	32	19
C 122 C1-31 DO YOU WORK WITH COMPRESSION (TRIMMER) CAPACITORS.	35	39	15	38	37	22
C 123 C1-32 DO YOU WORK WITH ELECTROLYTIC CAPACITORS (FIXED).	57	58	50	51	67	70
C 124 C1-33 DO YOU WORK WITH PAPER CAPACITORS (FIXED).	47	48	38	44	54	56
C 125 C1-34 DO YOU WORK WITH MICA CAPACITORS (FIXED).	52	53	42	48	59	59
C 126 C1-35 DO YOU WORK WITH CERAMIC CAPACITORS (FIXED).	54	54	50	47	63	63
C 127 C1-36 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF CAPACITORS.	19	19	18	15	25	22
C 128 C2-01 DO YOU WORK WITH TRANSFORMERS ON YOUR PRESENT JOB.	54	55	43	51	63	52
C 129 C2-02 DO YOU INSPECT TRANSFORMERS.	51	52	40	57	59	59
C 130 C2-03 DO YOU CLEAN TRANSFORMERS.	38	41	23	41	38	37
C 131 C2-04 DO YOU ADJUST TRANSFORMERS.	29	32	7	30	31	11
C 132 C2-05 DO YOU TROUBLESHOOT TRANSFORMERS.	47	47	43	44	49	63
C 133 C2-06 DO YOU REMOVE OR REPLACE COMPLETE TRANSFORMERS.	52	53	45	48	59	63
C 134 C2-07 DO YOU REMOVE OR REPLACE TRANSFORMER PARTS, SUCH AS THE PRIMARY WINDING.	6	7	3	4	7	4
C 135 C2-08 DO YOU MAKE A DISTINCTION BETWEEN MUTUAL INDUCTION AND MUTUAL INDUCTANCE (M).	4	4	2	2	5	4
C 136 C2-09 DO YOU USE THE SYMBOL FOR MUTUAL INDUCTANCE, M.	3	3	3	1	4	4
C 137 C2-10 DO YOU REFER TO OR USE THE COEFFICIENT OF COUPLING WHEN WORKING WITH TRANSFORMERS.	7	7	5	6	7	11
C 138 C2-11 DO YOU CALCULATE TURNS RATIOS FOR TRANSFORMERS USING CURRENT OR VOLTAGE RATIOS.	8	9	3	7	8	7
C 139 C2-12 DO YOU REFER TO REFLECTED IMPEDANCE WHEN WORKING WITH TRANSFORMERS.	7	8	2	5	9	4
C 140 C2-13 DO YOU CALCULATE IMPEDANCE INTERACTIONS FOR TRANSFORMERS.	5	5	2	4	5	4
C 141 C2-14 DO YOU WORK WITH AUTOTRANSFORMERS.	20	22	7	22	21	7
C 142 C2-15 DO YOU WORK WITH POWER TRANSFORMERS.	50	51	42	46	56	56
C 143 C2-16 DO YOU WORK WITH AUDIO TRANSFORMERS.	30	32	13	30	32	15
C 144 C2-17 DO YOU WORK WITH RADIO FREQUENCY TRANSFORMERS.	34	38	10	38	36	15
C 145 C2-18 DO YOU WORK WITH DON'T REMEMBER WHAT TYPE OF TRANSFORMER.	14	14	13	12	17	19
C 146 C2-19 DO YOU CHECK TRANSFORMERS FOR OPEN WINDINGS BY MEASURING RESISTANCE.	49	50	40	44	57	52
C 147 C2-20 DO YOU CHECK TRANSFORMERS FOR SHORTED WINDINGS BY MEASURING RESISTANCE.	44	45	38	40	51	48
C 148 C2-21 DO YOU CHECK TRANSFORMERS FOR SHORTED WINDINGS BY MEASURING OUTPUT VOLTAGES.	45	46	43	42	51	59
C 149 C2-22 DO YOU MEASURE RESISTANCE OF TRANSFORMER WINDINGS TO DETERMINE WHETHER A TRANSFORMER HAS A STEP-UP OR	17	19	8	19	17	4

TRANSFORMERS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
		001	002	003	004	005	006	007	008
DY-TSK									
C 150	C2-23 DO YOU MEASURE OUTPUT VOLTAGE OF TRANSFORMERS TO DETERMINE WHETHER A TRANSFORMER HAS A STEP-UP OR STEP-DOWN?	24	26	15	26	25	15		
C 151	C2-24 DO YOU REFER TO THE BASIC TRANSFORMER SCHEMATIC SYMBOLS FOR TRANSFORMERS?	53	54	45	50	60	63		
C 152	C2-25 DO YOU REFER TO THE MULTIPLE SECONDARY-WINDINGS SCHEMATIC SYMBOLS FOR TRANSFORMERS?	47	48	40	47	49	56		
C 153	C2-26 DO YOU REFER TO THE MULTIPLE TAP SCHEMATIC SYMBOLS FOR TRANSFORMERS?	47	48	42	47	49	63		
C 154	C2-27 DO YOU REFER TO THE CENTER TAP SCHEMATIC SYMBOLS FOR TRANSFORMERS?	50	51	42	47	55	63		
C 155	C2-28 DO YOU REFER TO THE AIR CORE SCHEMATIC SYMBOLS FOR TRANSFORMERS?	31	33	18	34	31	19		
C 156	C2-29 DO YOU REFER TO THE IRON CORE SCHEMATIC SYMBOLS FOR TRANSFORMERS?	35	36	30	39	32	37		
C 157	C2-30 DO YOU REFER TO THE COMBINATIONS OF THE ABOVE SCHEMATIC SYMBOLS FOR TRANSFORMERS?	41	42	32	42	42	33		
C 158	C2-31 DO YOU DETERMINE PHASE RELATIONSHIPS BETWEEN SECONDARY AND PRIMARY VOLTAGES OF TRANSFORMERS USING TRANSFORMERS YOU WORK WITH?	28	29	20	24	32	26		
C 159	C2-32 DO YOU DETERMINE OR REFER TO THE TYPE OF CORE IN TRANSFORMERS YOU WORK WITH?	17	18	5	17	17	7		
C 160	C2-33 DO YOU REFER TO OR USE THE GENERAL RULE THAT THE TURNS RATIO OF A TRANSFORMER IS EQUAL TO THE VOLTAGE RATIO?	16	17	12	15	19	15		
C 161	C2-34 DO YOU USE OR REFER TO STEP-UP OR STEP-DOWN RATIOS FOR TRANSFORMERS?	24	25	17	20	30	26		
C 162	C2-35 DO YOU CALCULATE VOLTAGE RATIOS FOR TRANSFORMERS USING TURNS RATIOS?	10	11	7	7	13	7		
C 163	C2-36 DO YOU CALCULATE CURRENT RATIOS FOR TRANSFORMERS USING TURNS RATIOS?	7	7	5	6	7	4		
C 164	C2-37 DOES YOUR JOB INVOLVE ANY TASKS DEALING WITH 3 PHASE TRANSFORMERS?	43	44	40	38	51	56		
C 165	C2-38 DO YOU INSPECT 3 PHASE TRANSFORMERS?	36	37	32	35	37	44		
C 166	C2-39 DO YOU CLEAN OR LUBRICATE 3 PHASE TRANSFORMERS?	22	23	15	23	20	22		
C 167	C2-40 DO YOU ADJUST 3 PHASE TRANSFORMERS?	16	19	3	17	16	7		
C 168	C2-41 DO YOU TROUBLESHOOT 3 PHASE TRANSFORMERS?	36	36	33	34	37	44		
C 169	C2-42 DO YOU REMOVE OR REPLACE COMPLETE 3 PHASE TRANSFORMER?	37	38	35	33	42	44		
C 170	C2-43 DO YOU REMOVE OR REPLACE 3 PHASE TRANSFORMER PARTS, SUCH AS A WINDING?	5	6	2	3	6	4		
C 171	C3-01 DO YOU USE OR REFER TO PERMANENT MAGNETS?	35	37	22	37	37	26		
C 172	C3-02 DO YOU USE OR REFER TO TEMPORARY MAGNETS?	21	21	15	21	19	22		
C 173	C3-03 DO YOU USE OR REFER TO RETENTIVITY OF MAGNETIC MATERIALS?	8	9	2	10	7	4		
C 174	C3-04 DO YOU USE OR REFER TO RELUCTANCE OF MAGNETIC MATERIALS?	6	7	2	6	6	4		

MAGNETISM

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK		SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
		001	002	003	004	005	006	007	008
C 175	C3-05 DO YOU USE OR REFER TO PERMEABILITY OF MAGNETIC MATERIALS.	9	10	2	11	7	4		
C 176	C3-06 DO YOU USE OR REFER TO RESIDUAL MAGNETISM.	11	12	5	14	8	4		
C 177	C3-07 DO YOU USE OR REFER TO MAGNETIC LINES OF FORCE OR FLUX.	15	16	5	17	14	7		
C 178	C3-08 DO YOU USE OR REFER TO WEBER'S THEORY OF MAGNETISM.	3	3	2	2	4	4		
C 179	C3-09 DO YOU USE OR REFER TO THE DOMAIN THEORY OF MAGNETISM.	4	4	5	1	6	4		
C 180	C3-10 DO YOU USE OR REFER TO MAGNETIC INDUCTION.	14	15	10	15	13	11		
C 181	C3-11 DO YOU USE OR REFER TO FLUX DENSITY.	9	11	2	10	11	4		
C 182	C3-12 DO YOU USE OR REFER TO THE GENERAL RULE THAT FOR MAGNETIC POLES, LIKE POLES REPEL AND UNLIKE POLES ATTRACT.	33	35	18	36	33	15		
C 183	C3-13 DO YOU USE THE LEFT HAND THUMB RULE TO FIND THE DIRECTION OF MAGNETIC FIELDS ABOUT STRAIGHT WIRES.	12	13	2	14	13	0		
C 184	C3-14 DO YOU USE THE LEFT THUMB RULE TO FIND THE NORTH POLE OF A CURRENT CARRYING COIL.	11	12	3	13	12	4		
D 185	D1-01 DO YOU WORK WITH RC, LR, OR RCL CIRCUITS ON YOUR PRESENT JOB.	46	48	30	44	55	37		RCL CIRCUITS
D 186	D1-02 DO YOU USE OR REFER TO VECTORS WHEN WORKING WITH RCL CIRCUITS.	7	7	3	3	11	0		
D 187	D1-03 DO YOU USE OR REFER TO PYTHAGOREAN THEOREM WHEN WORKING WITH RCL CIRCUITS.	5	6	3	3	9	0		
D 188	D1-04 DO YOU USE OR REFER TO SINE WHEN WORKING WITH RCL CIRCUITS.	8	8	3	5	12	0		
D 189	D1-05 DO YOU USE OR REFER TO COSINE WHEN WORKING WITH RCL CIRCUITS.	7	7	3	4	11	0		
D 190	D1-06 DO YOU USE OR REFER TO TANGENT WHEN WORKING WITH RCL CIRCUITS.	6	7	3	4	9	0		
D 191	D1-07 DO YOU USE OR REFER TO WATTS WHEN WORKING WITH RCL CIRCUITS.	28	31	15	23	41	15		
D 192	D1-08 DO YOU USE OR REFER TO TRUE POWER (PT) WHEN WORKING WITH RCL CIRCUITS.	17	18	12	13	21	11		
D 193	D1-09 DO YOU USE OR REFER TO MAXIMUM POWER (PM) WHEN WORKING WITH RCL CIRCUITS.	20	21	15	16	27	19		
D 194	D1-10 DO YOU USE OR REFER TO AVERAGE POWER (PAVE) WHEN WORKING WITH RCL CIRCUITS.	19	21	12	17	24	11		
D 195	D1-11 DO YOU USE OR REFER TO APPARENT POWER (PA) WHEN WORKING WITH RCL CIRCUITS.	14	14	8	12	17	7		
D 196	D1-12 DO YOU USE OR REFER TO POWER FACTOR (PF) WHEN WORKING WITH RCL CIRCUITS.	13	13	8	11	15	7		
D 197	D1-13 DO YOU USE OR REFER TO RESONANT CIRCUITS WHEN WORKING WITH RCL CIRCUITS.	29	32	12	28	34	15		
D 198	D1-14 DO YOU USE OR REFER TO BANDWIDTH WHEN WORKING WITH RCL CIRCUITS.	42	45	22	42	49	26		
D 199	D1-15 DO YOU USE OR REFER TO SELECTIVITY WHEN WORKING WITH RCL CIRCUITS.	36	39	18	35	43	26		

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

OY-TSK

	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
	001	002	003	004	005	006			
0 200 DI-16 DO YOU USE OR REFER TO RESONANT FREQUENCY WHEN WORKING WITH RCL CIRCUITS.	33	36	15	34	37	19			
0 201 DI-17 DO YOU USE OR REFER TO HALF POWER POINTS WHEN WORKING WITH RCL CIRCUITS.	28	31	12	22	39	15			
0 202 DI-18 DO YOU USE OR REFER TO BRANPASS REGION WHEN WORKING WITH RCL CIRCUITS.	30	33	13	28	35	15			
0 203 DI-19 DO YOU USE OR REFER TO CIRCUIT Q WHEN WORKING WITH RCL CIRCUITS.	17	19	7	14	21	7			
0 204 DI-20 DO YOU USE OR REFER TO TANK CIRCUITS WHEN WORKING WITH RCL CIRCUITS.	27	29	13	28	27	15			
0 205 DI-21 DO YOU DETERMINE VALUES OF TRIGONOMETRIC FUNCTIONS USING FORMULAS: SINE OF AN ANGLE = OPPOSITE SIDE	6	6	5	5	7	4			
0 206 DI-22 DO YOU DRAW VOLTAGE, CURRENT, OR IMPEDANCE VECTOR DIAGRAMS FOR CIRCUITS.	4	4	2	5	1	4			
0 207 DI-23 DO YOU CALCULATE TOTAL IMPEDANCE FOR CAPACITIVE CIRCUITS.	9	9	7	9	7	7			
0 208 DI-24 DO YOU CALCULATE PHASE ANGLES BETWEEN IMPEDANCE AND RESISTANCE IN CAPACITIVE CIRCUITS.	3	3	2	2	3	4			
0 209 DI-25 DO YOU CALCULATE TOTAL IMPEDANCE FOR SERIES RCL CIRCUITS.	9	9	7	7	7	7			
0 210 DI-26 DO YOU CALCULATE IMPEDANCE ANGLES FOR SERIES RCL CIRCUITS.	4	4	3	3	3	7			
0 211 DI-27 DO YOU CALCULATE APPARENT POWER (PA) FOR SERIES RCL CIRCUITS.	5	6	3	2	8	7			
0 212 DI-28 DO YOU CALCULATE TRUE POWER (PT) FOR SERIES RCL CIRCUITS.	8	8	3	6	9	7			
0 213 DI-29 DO YOU CALCULATE POWER FACTORS (PF) FOR SERIES RCL CIRCUITS.	7	7	3	6	7	7			
0 214 DI-30 DO YOU CALCULATE TOTAL CURRENT FOR PARALLEL RCL CIRCUITS.	9	10	7	6	11	7			
0 215 DI-31 DO YOU CALCULATE IMPEDANCE ANGLES FOR PARALLEL RCL CIRCUITS.	3	3	2	2	3	4			
0 216 DI-32 DO YOU CALCULATE TOTAL IMPEDANCE FOR PARALLEL RCL CIRCUITS USING THE ASSUMED VOLTAGE METHOD.	5	5	2	3	5	4			
0 217 DI-33 DO YOU CALCULATE TOTAL IMPEDANCE FOR PARALLEL RCL CIRCUITS USING OHM'S LAW.	7	8	2	7	6	4			
0 218 DI-34 DO YOU CHECK CAPACITORS USING OHMMETERS.	42	45	25	37	54	30			
0 219 DI-35 DO YOU CHECK CAPACITORS USING SUBSTITUTION.	28	31	13	28	31	22			
0 220 DI-36 DO YOU CHECK INDUCTORS USING OHMMETERS.	37	40	22	35	44	26			
0 221 DI-37 DO YOU CHECK INDUCTORS USING SUBSTITUTION.	26	28	10	26	29	19			
0 222 DI-38 DO YOU USE OR REFER TO THE GENERAL RULE THAT $\theta = 0$, $\text{PF} = 1$, AND $\text{PA} = \text{PT}$ FOR RESONANT CIRCUITS.	3	3	0	2	3	0			
0 223 DI-39 DO YOU CALCULATE RESONANT FREQUENCIES FOR RCL CIRCUITS.	8	9	5	9	8	4			
0 224 DI-40 DO YOU USE OR REFER TO THE GENERAL RULE THAT IMPEDANCE IS MINIMUM AND CURRENT MAXIMUM AT THE	13	14	5	14	12	4			

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK

	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006
D 225 D1-41 DO YOU USE OR REFER TO THE GENERAL RULE THAT LINE CURRENT IS MINIMUM AND IMPEDANCE MAXIMUM AT D 226 D1-42 DO YOU USE OR REFER TO THE GENERAL RULE THAT HALF POWER POINTS ARE AT 70.7 PERCENT OF THE PEAK D 227 D1-43 DO YOU USE OR REFER TO THE GENERAL RULE THAT BANDWIDTH IS INVERSELY PROPORTIONAL TO Q. D 228 D1-44 DO YOU DETERMINE HOW CHANGES IN FREQUENCY, RESISTANCE, CAPACITANCE, OR INDUCTANCE WILL AFFECT D 229 D2-01 IN YOUR PRESENT JOB, DO YOU WORK WITH, USE, OR REFER TO SERIES OR PARALLEL RESONANCE CIRCUITS OR D 230 D2-02 DO YOU WORK WITH, USE, OR REFER TO TIME CONSTANTS. D 231 D2-03 DO YOU WORK WITH, USE, OR REFER TO AVAILABLE VOLTAGE. D 232 D2-04 DO YOU WORK WITH, USE, OR REFER TO TRANSIENT INTERVALS. D 233 D2-05 DO YOU USE OR REFER TO THE GENERAL RULE THAT A CAPACITOR IS FULLY CHARGED (ON DISCHARGE) AFTER FIVE D 234 D2-06 DO YOU USE OR REFER TO UNIVERSAL TIME CONSTANT CHARTS. D 235 D2-07 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE CIRCUITS CURRENT OR COMPONENT VOLTAGES AFTER A D 236 D2-08 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE THE TIME REQUIRED FOR CIRCUIT CURRENT OR COMPONENT D 237 D2-09 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE COMPONENT VALUES REQUIRED FOR CIRCUIT CURRENT AND D 238 D2-10 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT IN LR CIRCUITS REACHES ITS MINIMUM VALUE 10R D 239 D3-01 DO YOU WORK WITH CIRCUITS USED AS FILTERS ON YOUR PRESENT JOB. D 240 D3-02 DO YOU INSPECT FILTER CIRCUITS. D 241 D3-03 DO YOU CLEAN FILTER CIRCUITS. D 242 D3-04 DO YOU ALIGN OR ADJUST FILTER CIRCUITS. D 243 D3-05 DO YOU TROUBLESHOOT TO THE FILTER CIRCUIT. D 244 D3-06 DO YOU TROUBLESHOOT TO COMPONENT PARTS OF FILTER CIRCUITS. D 245 D3-07 DO YOU REMOVE OR REPLACE THE COMPLETE FILTER CIRCUIT.	10	11	5	11	10	4
	24	26	10	22	31	15
	12	13	5	9	17	4
	11	13	0	10	15	0
	22	23	18	19	25	22
	20	21	12	18	23	11
	14	14	10	12	14	15
	11	11	10	8	11	7
	14	16	8	15	15	7
	6	7	0	6	7	0
	7	7	5	6	7	4
	6	6	7	5	5	4
	5	5	7	6	4	7
	6	6	5	6	5	4
	50	51	50	45	57	59
	47	48	38	43	54	48
	33	35	18	35	34	22
	30	33	10	32	33	7
	42	43	25	37	49	44
	39	42	20	38	45	26
	47	48	45	41	55	59

SERIES AND
PARALLEL RESONANCE
(TIME CONSTANTS)

FILTERS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

BY-TSK

	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006
D 246 D3-08 DO YOU REMOVE OR REPLACE COMPONENT PARTS OF FILTER CIRCUITS.	36	38	20	35	40	26
D 247 D3-09 DO YOU WORK ON LOW PASS FILTERS.	43	46	25	41	51	26
D 248 D3-10 DO YOU WORK ON HIGH PASS FILTERS.	43	46	25	43	51	26
D 249 D3-11 DO YOU WORK ON BANDPASS FILTERS.	49	50	40	43	57	48
D 251 D3-13 DO YOU WORK ON DON'T REMEMBER WHICH TYPE OF FILTER	37	39	25	35	43	37
D 250 D3-12 DO YOU WORK ON BAND-REJECT FILTERS.	14	14	12	15	14	15
D 252 D3-14 DO YOU WORK WITH L-SECTION FILTER CONFIGURATIONS.	26	28	12	27	27	7
D 253 D3-15 DO YOU WORK WITH T-SECTION FILTER CONFIGURATIONS.	24	27	10	27	23	7
D 254 D3-16 DO YOU WORK WITH PI-SECTION FILTER CONFIGURATIONS.	25	27	10	26	25	7
D 255 D3-17 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF FILTER CONFIGURATIONS.	26	26	23	22	32	33
D 256 D3-18 ARE PARALLEL RESONANT CIRCUITS USED IN FILTERS YOU WORK WITH.	25	28	10	27	25	7
D 257 D3-19 ARE SERIES-PARALLEL CIRCUITS USED IN FILTERS YOU WORK WITH.	27	29	10	28	27	7
D 258 D3-20 ARE SERIES RESONANT CIRCUITS USED IN FILTERS YOU WORK WITH.	27	29	12	27	28	15
D 259 D3-21 ARE DON'T REMEMBER WHICH TYPE OF BASIC CIRCUIT USED IN FILTERS YOU WORK WITH.	24	23	28	21	26	44
D 260 D3-22 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE CAPACITANCE OR INDUCTANCE VALUES REQUIRED FOR SPECIFIC JOB.	6	6	7	5	6	4
E 261 E1-01 DO YOU WORK WITH COUPLING DEVICES ON YOUR PRESENT JOB.	48	49	42	45	53	56
E 262 E1-02 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED	40	42	27	37	47	37
E 263 E1-03 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED	38	42	18	39	44	30
E 264 E1-04 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED	41	43	27	38	47	37
E 265 E1-05 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM THE RC COUPLING FUNCTIONS.	38	40	27	35	44	41
E 266 E1-06 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM THE IMPEDANCE COUPLING FUNCTIONS.	36	40	17	38	41	26
E 267 E1-07 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM THE TRANSFORMER COUPLING FUNCTIONS.	39	42	25	36	45	33
E 268 E1-08 DO YOU WORK WITH DIRECTLY COUPLED CIRCUITS.	41	43	28	38	48	37
E 269 E1-09 DO YOU WORK WITH CAPACITIVE-RESISTIVE COUPLED CIRCUITS.	36	38	22	32	42	33
E 270 E1-10 DO YOU WORK WITH CAPACITIVE-INDUCTIVE COUPLED CIRCUITS.	32	35	15	31	37	22
E 271 E1-11 DO YOU WORK WITH TRANSFORMER COUPLED CIRCUITS.	37	39	22	33	43	26
E 272 E1-12 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF COUPLING CIRCUIT.	14	14	13	15	13	15

COUPLING

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK		SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006
E 273	E2-01 ON YOUR PRESENT JOB DO YOU PERFORM SOLDERING TECHNIQUES OR INSPECT OR EVALUATE SOLDERED CONNECTIONS.	85	84	68	81	91	69
E 274	E2-02 DO YOU SELECT TYPE OF SOLDER TO USE.	65	65	65	60	77	63
E 275	E2-03 DO YOU ADD FLUX TO CONNECTIONS.	79	79	80	72	94	74
E 276	E2-04 DO YOU CLEAN CONNECTIONS USING SOLVENTS.	76	75	82	66	88	85
E 277	E2-05 DO YOU STRIP INSULATION FROM WIRES.	87	86	93	80	96	93
E 278	E2-06 DO YOU CONNECT OR DISCONNECT HEAT SINKS.	77	76	78	68	90	85
E 279	E2-07 DO YOU BEND OR SHAPE WIRES OR LEADS.	84	83	92	76	95	93
E 280	E2-08 DO YOU CUT WIRES.	87	86	93	80	96	93
E 281	E2-09 DO YOU FILE OR SHAPE SOLDERING IRON TIPS.	67	65	80	57	76	81
E 282	E2-10 DO YOU TIN SOLDERING IRON TIPS.	84	83	92	76	94	93
E 283	E2-11 DO YOU CLEAN SOLDERING IRON TIPS.	85	84	93	77	95	93
E 284	E2-12 DO YOU CLEAN ELECTRICAL SURFACES USING ERASERS.	73	72	75	65	87	93
E 285	E2-13 DO YOU TIN OR PRE-TIN CONDUCTORS.	82	81	83	74	93	89
E 286	E2-14 DO YOU INSPECT SOLDERED CONNECTIONS.	85	84	90	77	95	89
E 287	E2-15 DO YOU DESOLDER CONNECTIONS BY WICKING.	55	56	50	49	67	59
E 288	E2-16 DO YOU DESOLDER CONNECTIONS USING VACUUM DESOLDERING TOOLS.	80	80	77	74	90	85
E 289	E2-17 DO YOU CUT COMPONENT LEADS TO REMOVE COMPONENTS.	60	60	60	53	69	81
E 290	E2-18 DO YOU CRUSH COMPONENTS FOR REMOVAL.	28	28	25	19	37	26
E 291	E2-19 DO YOU MAKE HARDWIRE CONNECTIONS.	81	80	85	76	88	85
E 292	E2-20 DO YOU MAKE PRINTED CIRCUIT BOARD CONNECTIONS	68	68	67	55	87	93
E 293	E2-21 DO YOU SOLDER PASSIVE COMPONENTS SUCH AS RESISTORS OR CAPACITORS ON PRINTED CIRCUIT BOARDS	67	68	63	54	87	89
E 294	E2-22 DO YOU SOLDER ACTIVE COMPONENTS SUCH AS SOLID-STATE DIODES OR TRANSISTORS ON PRINTED CIRCUIT BOARDS	67	68	62	54	87	89
E 295	E3-01 DO YOU WORK WITH RELAYS ON YOUR PRESENT JOB	62	64	52	62	67	56
E 296	E3-02 DO YOU ADJUST RELAYS	19	21	10	20	17	15
E 297	E3-03 DO YOU CLEAN RELAYS	39	41	23	43	39	26
E 298	E3-04 DO YOU INSPECT RELAYS	52	53	42	51	55	48
E 299	E3-05 DO YOU REMOVE OR REPLACE COMPLETE RELAYS	60	61	52	57	66	56
E 300	E3-06 DO YOU REMOVE OR REPLACE PARTS OR RELAYS	11	12	7	11	14	7
E 301	E3-07 DO YOU TROUBLESHOOT RELAYS	54	55	47	53	57	56
E 302	E3-08 DO YOU STRAIGHTEN RELAY CONTACTS	28	30	17	31	24	22
E 303	E3-09 DO YOU PERFORM TASKS ON RELAY CONTACTS	24	26	12	23	28	15
E 304	E3-10 DO YOU PERFORM TASKS ON RELAY COILS	6	7	3	5	8	4
E 305	E3-11 DO YOU PERFORM TASKS ON RELAY COILS	8	9	3	7	9	4
E 306	E3-12 DO YOU PERFORM TASKS ON RELAY ARMATURES	8	9	3	7	9	4
E 307	E3-13 DO YOU PERFORM TASKS ON RELAY SPRINGS	9	10	3	9	10	4
E 308	E3-14 DO YOU USE OR REFER TO SINGLE POLE, SINGLE THROW (SPST), NORMALLY OPEN (NO) SCHEMATIC SYMBOLS FOR RELAYS	51	52	43	51	53	52
E 309	E3-15 DO YOU USE OR REFER TO SINGLE POLE, SINGLE THROW (SPST), NORMALLY CLOSED (NC) SCHEMATIC SYMBOLS FOR RELAYS	50	51	43	50	52	52
E 310	E3-16 DO YOU USE OR REFER TO SINGLE POLE, DOUBLE THROW (SPDT) SCHEMATIC SYMBOLS FOR RELAYS	49	50	38	48	51	41
E 311	E3-17 DO YOU USE OR REFER TO DOUBLE POLE, DOUBLE THROW (DPDT) SCHEMATIC SYMBOLS FOR RELAYS	48	49	40	47	51	44

RELAYS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK

SPC SPC SPC SPC SPC SPC
001 002 003 004 005 006

E 312 E3-18 DO YOU USE OR REFER TO OTHER RELAY SYMBOLS SCHEMATIC SYMBOLS FOR RELAYS 43 44 37 43 45 48

E 313 E3-19 DO YOU CHECK ELECTRICAL CONTINUITY OF COILS BY MEASURING RESISTANCE 46 48 32 45 49 30

F 314 F1-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH MICROPHONES 15 16 8 14 20 0

WITH MICROPHONES

MICROPHONES

F 315 F1-02 DO YOU INSPECT MICROPHONES 8 8 7 8 9 0

F 316 F1-03 DO YOU CLEAN MICROPHONES 5 5 3 5 4 0

F 317 F1-04 DO YOU OPERATE MICROPHONES 16 16 12 16 19 4

F 318 F1-05 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS BUT DO NOT TROUBLESHOOT DOWN TO COMPONENT 9 9 8 9 10 4

F 319 F1-06 DO YOU TROUBLESHOOT DOWN TO MICROPHONE PARTS 2 2 2 2 1 0

F 320 F1-07 DO YOU REMOVE OR REPLACE COMPLETE MICROPHONES 7 8 5 9 6 0

F 321 F1-08 DO YOU REMOVE OR REPLACE MICROPHONE PARTS 2 2 0 2 1 0

F 322 F1-09 DO YOU PERFORM TASKS ON CARBON MICROPHONES 2 2 3 1 2 0

F 323 F1-10 DO YOU PERFORM TASKS ON CAPACITOR MICROPHONES 2 2 3 1 1 0

F 324 F1-11 DO YOU PERFORM TASKS ON CRYSTAL MICROPHONES 2 2 3 2 1 0

F 325 F1-12 DO YOU PERFORM TASKS ON DYNAMIC MICROPHONES 4 4 3 3 3 0

F 326 F1-13 DO YOU PERFORM TASKS ON VELOCITY RIBBON MICROPHONES 1 1 0 0 1 0

F 327 F2-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH SPEAKERS 12 12 8 9 15 4

WITH SPEAKERS

SPEAKERS

F 328 F2-02 DO YOU INSPECT SPEAKERS 8 8 5 5 11 0

F 329 F2-03 DO YOU CLEAN SPEAKERS 5 5 2 5 7 0

F 330 F2-04 DO YOU OPERATE SPEAKERS 11 11 7 7 15 0

F 331 F2-05 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS BUT DO NOT TROUBLESHOOT DOWN TO COMPONENT 9 9 5 6 11 0

F 332 F2-06 DO YOU TROUBLESHOOT DOWN TO SPEAKER PARTS 2 2 2 1 1 0

F 333 F2-07 DO YOU REMOVE OR REPLACE COMPLETE SPEAKERS 8 8 5 5 11 0

F 334 F2-08 DO YOU REMOVE OR REPLACE SPEAKER PARTS 1 1 0 0 1 0

F 335 F2-09 DO YOU PERFORM ANY TASKS ON SPEAKER CONES 1 1 0 1 1 0

F 336 F2-10 DO YOU PERFORM ANY TASKS ON SPEAKER SPIDERS 1 1 0 0 1 0

F 337 F2-11 DO YOU PERFORM ANY TASKS ON SPEAKER FIELD COILS 1 1 0 0 1 0

F 338 F2-12 DO YOU PERFORM ANY TASKS ON SPEAKER VOICE COILS 1 1 0 0 1 0

F 339 F2-13 DO YOU PERFORM ANY TASKS ON SPEAKER PERMANENT MAGNETS 1 1 0 1 1 0

F 340 F2-14 DO YOU PERFORM ANY TASKS ON SPEAKER ELECTROMAGNETS 1 1 0 1 1 0

F 341 F2-15 DO YOU PERFORM ANY TASKS ON SPEAKER SOFT IRON CORES 1 1 0 1 1 0

F 342 F3-01 DO YOU USE OSCILLOSCOPES IN YOUR PRESENT JOB 75 76 73 72 85 89

F 343 F3-02 DO YOU USE OSCILLOSCOPES TO PERFORM OPERATIONAL CHECKS 71 73 58 68 82 70

OSCILLOSCOPES

F 344 F3-03 DO YOU USE OSCILLOSCOPES TO PERFORM ALIGNMENTS OR ADJUSTMENTS 67 68 62 60 81 81

F 345 F3-04 DO YOU USE OSCILLOSCOPES TO TROUBLESHOOT ELECTRONIC CIRCUITS 68 68 63 63 79 81

F 346 F3-05 DO YOU USE OSCILLOSCOPES TO MEASURE FREQUENCY 70 71 67 68 80 89

F 347 F3-06 DO YOU USE OSCILLOSCOPES TO MEASURE TIME 69 70 67 64 79 85

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
	001	002	003	004	005	006	007	008
F 348 F3-07 DO YOU USE OSCILLOSCOPES TO OBSERVE LISAJOUS PATTERNS	22	22	22	23	21	22		
F 349 F3-08 DO YOU USE OSCILLOSCOPES TO OBSERVE SIGNALS WHILE UTILIZING ATTENUATOR PROBES	67	67	65	64	75	85		
F 350 F3-09 DO YOU USE OSCILLOSCOPES TO MAKE FREQUENCY OR TIME MEASUREMENTS USING DELAY TIME MULTIPLIERS	42	43	32	37	51	37		
F 351 F3-10 DO YOU USE OSCILLOSCOPES TO MEASURE AC VOLTAGE	70	70	67	66	77	89		
F 352 F3-11 DO YOU USE OSCILLOSCOPES TO MEASURE OR OBSERVE SIGNALS AFTER FIRST ADJUSTING THE GAIN AND DC BAL CONTROLS	59	58	58	58	61	81		
F 353 F3-12 DO YOU USE OSCILLOSCOPES TO MEASURE DC VOLTAGE	72	73	65	64	85	89		
G 354 G1-01 DO YOU WORK WITH SEMICONDUCTOR DIODES IN YOUR PRESENT JOB	62	63	53	51	80	78		
SEMICONDUCTOR DIODES								
G 355 G1-02 DO YOU INSPECT DIODES	58	59	50	48	73	74		
G 356 G1-03 DO YOU REMOVE OR REPLACE DIODES	60	62	52	49	79	78		
G 357 G1-04 DO YOU CHECK DIODES USING AN INSTRUMENT	59	61	50	50	75	74		
G 358 G1-05 DO YOU USE ENERGY LEVEL DIAGRAMS IN YOUR WORK WITH DIODES	5	6	2	4	9	0		
G 359 G1-06 DO YOU USE PN JUNCTION DIODE CHARACTERISTIC CURVES, TOGETHER WITH VALUES OF FORWARD AND REVERSE BIAS VOLTAGE, TO COMPUTE FORWARD OR REVERSE BIAS RESISTANCE FOR DIODES	15	16	8	13	19	11		
G 361 G1-08 DO YOU USE OR REFER TO THE GENERAL RULE THAT TEMPERATURE CAN AFFECT THE OPERATION OF DIODES	37	37	35	32	44	54		
G 362 G1-09 DO YOU IDENTIFY SEMICONDUCTOR DIODES AS OPPOSED TO OTHER ELECTRONIC COMPONENTS, SUCH AS RESISTORS, BASED ON EFFECTS OF DOPING ON CURRENT FLOW	53	55	43	40	74	63		
G 363 G1-10 DO YOU REFER TO OR DO YOU DETERMINE THE GENERAL EFFECTS OF DOPING ON CURRENT FLOW	11	12	8	10	15	7		
G 364 G1-11 DO YOU USE OR REFER TO MEASUREMENTS OF FORWARD BIAS RESISTANCE	40	41	33	35	46	52		
G 365 G1-12 DO YOU USE OR REFER TO DIODE COLOR CODING	25	26	15	23	30	15		
G 366 G1-13 DO YOU USE OR REFER TO CENTRIFUGAL FORCE OF AN ELECTRON IN ORBIT AROUND A NUCLEUS	2	3	0	2	3	0		
G 367 G1-14 DO YOU USE OR REFER TO CENTRIPETAL FORCE OF AN ELECTRON IN ORBIT AROUND A NUCLEUS	3	3	0	2	4	0		
G 368 G1-15 DO YOU USE OR REFER TO DIODE NUMBERING SYSTEM, SUCH AS IN 538	48	49	42	43	58	67		
G 369 G1-16 DO YOU USE OR REFER TO KINETIC ENERGY OF AN ELECTRON MOVING IN ORBIT	2	3	0	2	3	0		
G 370 G1-17 DO YOU USE OR REFER TO POTENTIAL ENERGY OF AN ELECTRON MOVING IN ORBIT	2	2	0	2	3	0		
G 371 G1-18 DO YOU USE OR REFER TO MEASUREMENTS OF REVERSE BIAS RESISTANCE	38	39	37	30	47	52		
G 372 G1-19 DO YOU USE OR REFER TO NUMBER OF ELECTRONS IN A PARTICULAR SHELL OR ORBIT	2	3	0	2	3	0		
G 373 G1-20 DO YOU USE OR REFER TO PERMISSIBLE ENERGY LEVELS OF AN ORBITING ELECTRON	2	3	0	2	3	0		

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK		SPC	SPC	SPC	SPC	SPC	SPC	SPC
		001	002	003	004	005	006	006
G 374	GI-21 DO YOU USE OR REFER TO FORBIDDEN ENERGY LEVELS OF AN ORBITING ELECTRON	2	2	0	1	3	0	0
G 375	GI-22 DO YOU USE OR REFER TO VALENCE ELECTRONS (THOSE IN THE OUTERMOST SHELL)	4	4	0	3	5	0	0
G 376	GI-23 DO YOU USE OR REFER TO ATOMIC NUMBER (TOTAL NUMBER OF ELECTRONS IN ATOM)	2	2	0	1	3	0	0
G 377	GI-24 DO YOU USE OR REFER TO SYMBOLS ON THE DIODE WHICH INDICATE THE CATHODE END	51	53	42	42	67	67	67
G 378	GI-25 DO YOU NEED TO KNOW WHICH MATERIALS ARE USED IN THE CONSTRUCTION OF DIODES SUCH AS GERMANIUM OR SILICON	14	15	7	17	12	7	7
G 379	GI-26 DO YOU NEED TO KNOW THAT SEMICONDUCTORS HAVE NEGATIVE TEMPERATURE COEFFICIENTS OF RESISTANCE (AS TEMPERATURE INCREASES RESISTANCE DECREASES)	23	24	17	22	29	26	26
G 380	GI-27 DO YOU USE OR REFER TO PN JUNCTION DIODE CHARACTERISTIC CURVES, SUCH AS VOLTAGE - CURRENT	11	12	3	11	11	4	4
G 381	GI-28 DO YOU DETERMINE WHETHER PN JUNCTION DIODES ARE FORWARD BIASED OR REVERSE BIASED WHEN YOU READ OR FORWARD BIAS OR REVERSE BIAS	43	45	35	36	56	48	48
G 382	GI-29 DO YOU USE OR REFER TO VALENCE BAND IN SEMICONDUCTOR MATERIALS	4	4	0	3	4	0	0
G 383	GI-30 DO YOU USE OR REFER TO FORBIDDEN BAND IN SEMICONDUCTOR MATERIALS	4	4	0	3	5	0	0
G 384	GI-31 DO YOU USE OR REFER TO CONDUCTION BAND IN SEMICONDUCTOR MATERIALS	5	5	2	5	5	0	0
G 385	GI-32 DO YOU USE OR REFER TO COVALENT BONDING IN SEMICONDUCTOR MATERIALS	3	4	0	3	5	0	0
G 386	GI-33 DO YOU USE OR REFER TO ELECTRON-HOLE PAIR CREATED IN SEMICONDUCTORS	4	5	0	4	6	0	0
G 387	GI-34 DO YOU USE OR REFER TO ELECTRON FLOW OR HOLE FLOW IN SEMICONDUCTORS	9	11	2	9	12	0	0
G 388	GI-35 DO YOU USE OR REFER TO DONOR IMPURITY IN SEMICONDUCTORS	4	4	0	3	5	0	0
G 389	GI-36 DO YOU USE OR REFER TO ACCEPTOR IMPURITY IN SEMICONDUCTORS	4	4	0	3	5	0	0
G 390	GI-37 DO YOU USE OR REFER TO P-TYPE SEMICONDUCTOR MATERIAL	21	23	12	18	29	7	7
G 391	GI-38 DO YOU USE OR REFER TO N-TYPE SEMICONDUCTOR MATERIAL	21	23	12	18	29	7	7
G 392	GI-39 DO YOU USE OR REFER TO MAJORITY CARRIERS IN SEMICONDUCTORS	6	6	2	5	6	0	0
G 393	GI-40 DO YOU USE OR REFER TO MINORITY CARRIERS IN SEMICONDUCTORS	5	6	2	4	6	0	0
G 394	GI-41 DO YOU USE OR REFER TO JUNCTION RECOMBINATION IN SEMICONDUCTORS	4	5	0	4	5	0	0
G 395	GI-42 DO YOU USE OR REFER TO DEPLETION REGION IN SEMICONDUCTORS	6	7	0	6	7	0	0
G 396	GI-43 DO YOU USE OR REFER TO RELATIONSHIP BETWEEN BARRIER WIDTH AND DIFFERENCE OF POTENTIAL	6	7	0	5	7	0	0

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006
5 397 61-44 DO YOU USE OR REFER TO THE 10:1 BACK TO FRONT RESISTANCE RATIO FOR DIODES	33	33	33	27	38	48
6 398 61-45 DO YOU USE OR REFER TO BARRIER HEIGHT IN SEMICONDUCTORS	4	4	5	2	5	11
6 399 61-46 DO YOU USE OR REFER TO DIODE SUBSTITUTION INFORMATION	23	25	15	21	27	19
6 400 61-47 DO YOU USE OR REFER TO MAXIMUM AVERAGE FORWARD CURRENT DIODE RATINGS	15	17	8	15	17	11
6 401 61-48 DO YOU USE OR REFER TO PEAK RECURRENT FORWARD CURRENT DIODE RATINGS	13	14	8	13	15	11
6 402 61-49 DO YOU USE OR REFER TO MAXIMUM SURGE CURRENT DIODE RATINGS	14	16	7	13	17	11
6 403 61-50 DO YOU USE OR REFER TO PEAK REVERSE (INVERSE) VOLTAGE DIODE RATINGS	18	19	10	17	19	15
6 404 62-01 DO YOU WORK WITH TRANSISTORS IN YOUR PRESENT JOB.	63	64	57	52	81	81
6 405 62-02 DO YOU INSPECT TRANSISTORS	61	61	57	51	76	85
6 406 62-03 DO YOU REMOVE OR REPLACE TRANSISTORS	62	63	58	51	80	85
6 407 62-04 DO YOU CHECK TRANSISTORS USING AN INSTRUMENT	60	62	47	49	79	63
6 408 62-05 DO YOU USE OR REFER TO EMITTER - BASE (EB) FORWARD AND REVERSE RESISTANCE MEASUREMENTS	57	59	45	48	75	56
6 409 62-06 DO YOU USE OR REFER TO COLLECTOR - BASE (CB) FORWARD AND REVERSE RESISTANCE MEASUREMENTS	56	58	43	46	73	56
6 410 62-07 DO YOU USE OR REFER TO EMITTER - COLLECTOR (EC) RESISTANCE MEASUREMENTS	56	58	42	46	73	52
6 411 62-08 DO YOU USE OR REFER TO HOW BIASING AFFECTS THE PHYSICAL BARRIER WIDTH OF THE EMITTER - BASE JUNCTION	18	20	8	16	25	15
6 412 62-09 DO YOU USE OR REFER TO HOW BIASING AFFECTS THE PHYSICAL BARRIER WIDTH OF THE COLLECTOR - BASE JUNCTION	16	20	7	16	25	7
6 413 62-10 DO YOU USE OR REFER TO THE PHYSICAL SIZE OF THE TRANSISTOR STRUCTURE (COLLECTOR, BASE AND EMITTER)	31	32	25	29	37	33
6 414 62-11 DO YOU USE OR REFER TO LEAKAGE CURRENT (ICBO) IN A TRANSISTOR	14	16	7	10	22	7
6 415 62-12 DO YOU USE OR REFER TO TRANSISTOR SCHEMATIC SYMBOLS, 6 416 62-13 DO YOU USE OR REFER TO TRANSISTOR NOTATION SUCH AS 41, 42, 43, ETC	63	64	55	51	81	78
6 417 62-14 DO YOU USE OR REFER TO TRANSISTOR SUBSTITUTION INFORMATION	63	64	55	51	82	78
6 418 62-15 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE TRANSISTOR BASE CURRENT IB IS NORMALLY SIGNIFICANTLY 6 419 62-16 DO YOU USE THE INFORMATION THAT THE EFFECT OF EMITTER BASE VOLTAGE ON BASE CURRENT IS THE CONTROLLING FACTOR FOR 6 420 62-17 DO YOU USE THE GENERAL RULE THAT LEAKAGE CURRENT (ICBO) IN A TRANSISTOR INCREASES AS TEMPERATURE INCREASES	39	41	23	34	49	37
6 421 62-18 DO YOU USE OR REFER TO TRANSISTOR CHARACTERISTIC CURVES	23	25	8	17	33	7
	31	32	22	25	40	26
	15	17	5	13	21	4
	10	11	3	7	12	0

TRANSISTORS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		DY-TSK											
		SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
		001	002	003	004	005	006	001	002	003	004	005	006
G 422	G2-19 DO YOU USE OR REFER TO BETA TRANSISTOR GAINS	9	10	2	7	13	4						
G 423	G2-20 DO YOU USE OR REFER TO ALPHA TRANSISTOR GAINS	8	9	2	6	12	4						
G 424	G2-21 DO YOU USE OR REFER TO GAMMA TRANSISTOR GAINS	8	9	2	6	11	4						
G 425	G2-22 DO YOU CALCULATE BETA TRANSISTOR GAINS	4	4	0	2	7	0						
G 426	G2-23 DO YOU CALCULATE ALPHA TRANSISTOR GAINS	4	4	5	0	2	7	0					
G 427	G2-24 DO YOU CALCULATE GAMMA TRANSISTOR GAINS	4	4	0	2	6	0						
G 428	G3-01 DO YOU WORK WITH TRANSISTOR AMPLIFIERS IN YOUR PRESENT JOB	50	51	45	41	64	59						
G 429	G3-02 DO YOU INSPECT TRANSISTOR AMPLIFIERS	49	50	43	41	61	59						
G 430	G3-03 DO YOU ALIGN OR ADJUST TRANSISTOR AMPLIFIERS	41	42	37	39	45	48						
G 431	G3-04 DO YOU TROUBLESHOOT TO THE AMPLIFIER CIRCUIT LEVEL	48	49	42	41	60	59						
G 432	G3-05 DO YOU TROUBLESHOOT TO AMPLIFIER COMPONENTS	45	47	35	39	57	48						
G 433	G3-06 DO YOU REMOVE OR REPLACE THE COMPLETE AMPLIFIER	47	48	40	40	59	48						
G 434	G3-07 DO YOU REMOVE OR REPLACE AMPLIFIER COMPONENTS	44	45	37	37	55	44						
G 435	G3-08 DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN COLLECTOR CURRENT WHICH RESULTS FROM A CHANGE IN BASE	22	23	17	22	26	22						
G 436	G3-09 DO YOU USE OR REFER TO (COMMON EMITTER) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN	11	12	5	9	15	0						
G 437	G3-10 DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN COLLECTOR VOLTAGE WHICH RESULTS FROM A CHANGE IN BASE	21	22	18	20	23	22						
G 438	G3-11 DO YOU USE OR REFER TO (COMMON EMITTER) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN	10	11	8	9	11	7						
G 439	G3-12 DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN BASE CURRENT WHICH RESULTS FROM AN INPUT SIGNAL	21	22	15	16	25	22						
G 440	G3-13 DO YOU USE OR REFER TO (COMMON EMITTER) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN	11	11	7	10	13	4						
G 441	G3-14 DO YOU USE THE LOAD-LINE METHOD OF ANALYSIS IN YOUR CIRCUIT ANALYSIS (THIS METHOD REQUIRES YOU TO PLOT A	5	5	3	3	6	4						
G 442	G3-15 DO YOU USE OR REFER TO THE OPERATING POINT Q (QUIESCENT POINT) FOR A TRANSISTOR	14	15	8	11	19	15						
G 443	G3-16 DO YOU CALCULATE THE SPECIFIC QUIESCENT POINT FOR A PARTICULAR TRANSISTOR	7	7	7	6	7	11						
G 444	G3-17 DO YOU MEASURE VOLTAGE GAIN USED IN THE COMMON EMITTER CONFIGURATION	31	32	22	31	35	33						
G 445	G3-18 DO YOU MEASURE CURRENT GAIN USED IN THE COMMON EMITTER CONFIGURATION	22	24	12	22	25	11						
G 446	G3-19 DO YOU MEASURE POWER GAIN USED IN THE COMMON EMITTER CONFIGURATION	24	26	17	24	28	19						
G 447	G3-20 DO YOU CALCULATE THE VOLTAGE GAIN FOR SPECIFIC TRANSISTORS USING A FORMULA THAT IS, DO YOU DIVIDE THE CHANGE	6	6	5	5	7	0						

TRANSISTOR
AMPLIFIERS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	SPC	SPC	SPC	SPC	SPC	SPC	SPC
	001	002	003	004	005	006	006
6 448 G3-21 DO YOU CALCULATE THE CURRENT GAIN FOR SPECIFIC TRANSISTORS USING A FORMULA THAT IS, DO YOU DIVIDE THE	6	6	5	5	7	0	0
6 449 G3-22 DO YOU CALCULATE THE POWER GAIN FOR A SPECIFIC TRANSISTOR USING A FORMULA THAT IS, DO YOU MULTIPLY THE	6	6	3	5	7	0	0
6 450 G3-23 DO YOU NEED TO KNOW THAT MORE COLLECTOR CURRENT IS GENERATED WITH LESS COLLECTOR VOLTAGE AS TEMPERATURE	7	7	7	7	8	4	4
6 451 G3-24 DO YOU COMPUTE THE STATIC OPERATING POINT [Q] OF A TRANSISTOR AT DIFFERENT TEMPERATURES	2	2	0	1	3	0	0
6 452 G3-25 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH	21	22	12	19	25	15	15
6 453 G3-26 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH SELF-	21	23	12	21	25	15	15
6 454 G3-27 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH	20	22	12	19	25	15	15
6 455 G3-28 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH	21	22	15	19	25	22	22
6 456 G3-29 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH	21	22	13	19	25	19	19
6 457 G3-30 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH	19	20	13	18	23	19	19
6 458 G3-31 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM EMITTER (SWAMPING) RESISTOR STABILIZATION	24	25	15	22	27	19	19
6 459 G3-32 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM SELF-BIAS STABILIZATION	24	26	13	24	29	19	19
6 460 G3-33 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM THERMISTOR STABILIZATION	24	25	13	22	29	19	19
6 461 G3-34 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM FORWARD BIAS DIODE STABILIZATION	24	26	13	23	27	22	22
6 462 G3-35 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM REVERSE BIAS DIODE STABILIZATION	24	26	13	24	27	22	22
6 463 G3-36 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM DOUBLE DIODE STABILIZATION	21	22	13	19	25	19	19
6 464 G3-37 DO YOU IDENTIFY AMPLITUDE DISTORTION FOR TRANSISTOR CIRCUITS	27	28	20	23	33	30	30
6 465 G3-38 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF AMPLITUDE DISTORTION	30	31	23	24	35	37	37

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		DY-TSK											
		SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
		001	002	003	004	005	006	007	008	009	010	011	012
G 466	G3-39 DO YOU IDENTIFY FREQUENCY DISTORTION FOR TRANSISTOR CIRCUITS	28	30	18	24	35	30						
G 467	G3-40 DO YOU IDENTIFY PHASE DISTORTION FOR TRANSISTOR CIRCUITS	19	21	7	15	25	4						
G 468	G3-41 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF PHASE DISTORTION	19	21	7	15	23	4						
G 469	G3-42 DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF FREQUENCY DISTORTION	25	27	17	23	29	26						
G 470	G3-43 DO YOU NEED TO KNOW THE DEGENERATIVE EFFECTS ON THE CIRCUIT CAUSED BY CHANGING EMITTER RESISTANCE FOR	12	13	8	10	13	15						
G 471	G3-44 DO YOU DETERMINE THE CLASS OF OPERATION FOR AMPLIFIERS IN ORDER TO TROUBLESHOOT AMPLIFIER CIRCUITS	17	17	15	14	21	22						
G 472	G3-45 DO YOU TROUBLESHOOT OR REPAIR PARAPHASE AMPLIFIERS	20	22	13	18	23	19						
G 473	G3-46 DO YOU TROUBLESHOOT OR REPAIR PUSH-PULL AMPLIFIERS	35	37	23	32	42	33						
G 474	G3-47 DO YOU TROUBLESHOOT OR REPAIR COMPLEMENTARY SYMMETRY CIRCUITS	27	29	18	24	31	30						
G 475	G3-48 DO YOU TROUBLESHOOT OR REPAIR COMPOUND-CONNECTED AMPLIFIERS	26	27	22	20	33	33						
G 476	G3-49 DO YOU TROUBLESHOOT OR REPAIR CASCADE-CONNECTED AMPLIFIERS	30	31	25	25	36	41						
H 477	H1-01 DO YOU USE OR REFER TO VARACTORS	35	37	22	32	43	26						
H 478	H1-02 DO YOU USE OR REFER TO TUNNEL DIODES	38	39	33	34	45	48						
H 479	H1-03 DO YOU USE OR REFER TO FIELD EFFECT TRANSISTORS (FET)	45	45	42	38	55	59						
H 480	H1-04 DO YOU USE OR REFER TO UNIJUNCTION TRANSISTORS	46	47	42	40	57	59						
H 481	H1-05 DO YOU USE OR REFER TO ZENER DIODES	58	59	52	51	71	78						
H 482	H1-06 DO YOU USE OR REFER TO INTEGRATED CIRCUITS	58	58	57	48	73	81						
H 483	H2-01 IN YOUR PRESENT JOB, DO YOU WORK WITH POWER SUPPLIES	70	71	62	59	78	70						
H 484	H2-02 DO YOU INSPECT POWER SUPPLIES	65	66	60	61	75	70						
H 485	H2-03 DO YOU CLEAN POWER SUPPLIES	49	52	28	51	55	41						
H 486	H2-04 DO YOU ALIGN OR ADJUST POWER SUPPLIES	59	60	52	48	75	67						
H 487	H2-05 DO YOU TROUBLESHOOT TO POWER SUPPLY CIRCUIT LEVEL	58	59	52	51	70	70						
H 488	H2-06 DO YOU TROUBLESHOOT TO POWER SUPPLY COMPONENTS	45	46	37	44	47	48						
H 489	H2-07 DO YOU REMOVE OR REPLACE COMPLETE POWER SUPPLIES	71	72	63	69	80	74						
H 490	H2-08 DO YOU REMOVE OR REPLACE POWER SUPPLY COMPONENTS	43	44	37	41	45	52						
H 491	H2-09 DO YOU WORK WITH HALF-WAVE RECTIFIERS	45	48	28	42	55	33						
H 492	H2-10 DO YOU WORK WITH FULL-WAVE RECTIFIERS OTHER THAN BRIDGE RECTIFIERS	46	48	32	43	55	41						
H 493	H2-11 DO YOU WORK WITH BRIDGE RECTIFIERS	47	48	37	41	55	52						
H 494	H2-12 DO YOU WORK WITH THREE-PHASE RECTIFIERS	46	48	37	41	55	44						
H 495	H2-13 DO YOU USE OR REFER TO INPUT VOLTAGE	55	57	45	49	67	59						
H 496	H2-14 DO YOU USE OR REFER TO INPUT FREQUENCY	44	45	38	39	52	48						
H 497	H2-15 DO YOU USE OR REFER TO PEAK OUTPUT VOLTAGE	45	47	38	39	54	56						
H 498	H2-16 DO YOU USE OR REFER TO AVERAGE OUTPUT VOLTAGE	45	46	42	39	53	56						
H 499	H2-17 DO YOU USE OR REFER TO RIPPLE AMPLITUDE	40	40	35	35	45	44						
H 500	H2-18 DO YOU USE OR REFER TO RIPPLE FREQUENCY	35	37	25	31	43	26						

SOLID-STATE
SPECIAL PURPOSE
DEVICES

POWER SUPPLIES

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK		SPC	SPC	SPC	SPC	SPC	SPC
		001	002	003	004	005	006
H 501	H2-19 DO YOU USE OR REFER TO PEAK REVERSE (INVERSE) VOLTAGE	26	27	18	23	29	22
H 502	H2-20 DO YOU USE OR REFER TO SHAPE OF OUTPUT WAVEFORMS	47	48	42	41	55	52
H 503	H2-21 DO YOU USE OR REFER TO EFFECTIVE OUTPUT VOLTAGE	48	49	42	44	55	56
H 504	H2-22 DO YOU WORK WITH CIRCUITS WHICH EMPLOY CAPACITIVE FILTERS	42	45	27	38	51	33
H 505	H2-23 DO YOU WORK WITH CIRCUITS WHICH EMPLOY INDUCTIVE FILTERS	40	43	22	39	47	30
H 506	H2-24 DO YOU WORK WITH CIRCUITS WHICH EMPLOY CAPACITIVE INPUT L-TYPE FILTERS	35	37	22	34	39	30
H 507	H2-25 DO YOU WORK WITH CIRCUITS WHICH EMPLOY INDUCTIVE INPUT L-TYPE FILTERS	34	37	17	34	37	22
H 508	H2-26 DO YOU WORK WITH CIRCUITS WHICH EMPLOY LC PI-TYPE FILTERS	33	35	22	33	36	30
H 509	H2-27 DO YOU WORK WITH CIRCUITS WHICH EMPLOY RC PI-TYPE FILTERS	34	35	23	31	39	33
H 510	H2-28 DO YOU WORK WITH CIRCUITS WHICH EMPLOY DON'T REMEMBER WHICH TYPE OF FILTER	26	27	18	23	35	26
H 511	H2-29 DO YOU HAVE THE OPTION OF REPLACING ONE TYPE OF FILTER WITH A DIFFERENT TYPE FILTER	4	4	2	3	4	4
H 512	H3-01 DO YOU WORK WITH OSCILLATORS IN YOUR PRESENT JOB	53	55	38	53	60	44
H 513	H3-02 DO YOU INSPECT OSCILLATORS	47	48	40	43	54	48
H 514	H3-03 DO YOU ALIGN OR ADJUST OSCILLATORS	44	45	40	38	53	52
H 515	H3-04 DO YOU REMOVE OR REPLACE COMPLETE OSCILLATORS	50	51	43	49	55	52
H 516	H3-05 DO YOU REMOVE OR REPLACE OSCILLATOR COMPONENTS	30	32	17	28	33	22
H 517	H3-06 DO YOU TROUBLESHOOT TO OSCILLATOR CIRCUIT LEVEL	42	44	22	34	54	41
H 518	H3-07 DO YOU TROUBLESHOOT TO OSCILLATOR COMPONENTS	32	33	20	30	35	26
H 519	H3-08 DO YOU USE OR REFER TO FEEDBACK	34	36	18	31	41	19
H 520	H3-09 DO YOU USE OR REFER TO FREQUENCY DETERMINING DEVICES (FDD)	32	34	22	31	37	30
H 521	H3-10 DO YOU USE OR REFER TO AMPLITUDE STABILITY	33	35	23	31	39	30
H 522	H3-11 DO YOU USE OR REFER TO FREQUENCY STABILITY	38	40	27	36	45	33
H 523	H3-12 DO YOU USE OR REFER TO DAMPING	21	23	8	17	29	11
H 524	H3-13 DO YOU USE OR REFER TO REGENERATIVE FEEDBACK	29	32	13	26	38	15
H 525	H3-14 DO YOU USE OR REFER TO PIEZOELECTRIC EFFECT	12	12	7	10	15	7
H 526	H3-15 DO YOU USE OR REFER TO CRITICAL DAMPING	12	13	7	10	15	7
H 527	H3-16 DO YOU USE OR REFER TO UNDER DAMPING	13	14	7	11	17	7
H 528	H3-17 DO YOU USE OR REFER TO OVER DAMPING	13	14	7	10	18	7
H 529	H3-18 DO YOU WORK WITH OSCILLATORS WHICH USE LC TANK CIRCUITS AS FDD	21	23	8	19	23	7
H 530	H3-19 DO YOU WORK WITH OSCILLATORS WHICH USE RC NETWORKS AS FDD	27	29	13	24	31	19
H 531	H3-20 DO YOU WORK WITH OSCILLATORS WHICH USE CRYSTALS AS FDD	27	29	20	22	32	30
H 532	H3-21 DO YOU WORK WITH OSCILLATORS WHICH USE DON'T REMEMBER WHICH TYPE OF FDD	16	17	8	15	21	11
H 533	H3-22 DO YOU WORK WITH SERIES HARTLEY SINUSOIDAL OSCILLATORS	20	22	3	19	23	0

OSCILLATORS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		DY-TSK											
		SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
		001	002	003	004	005	006	007	008	009	010	011	012
Oscillators													
M 534	M3-23 DO YOU WORK WITH SHUNT HARTLEY SINUSOIDAL OSCILLATORS	18	20	3	18	20	0						
M 535	M3-24 DO YOU WORK WITH COLPITTS SINUSOIDAL OSCILLATORS	19	21	5	19	19	0						
M 536	M3-25 DO YOU WORK WITH CLAPP SINUSOIDAL OSCILLATORS	13	15	3	11	15	0						
M 537	M3-26 DO YOU WORK WITH BUTLER SINUSOIDAL OSCILLATORS	11	12	3	10	12	0						
M 538	M3-27 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF	26	28	18	24	34	30						
Multivibrators													
I 539	I1-01 DO YOU WORK WITH MULTIVIBRATORS IN YOUR PRESENT JOB	45	48	32	34	63	37						
I 540	I1-02 DO YOU INSPECT WAVE GENERATING OR SHAPING CIRCUITS	40	42	32	31	51	41						
I 541	I1-03 DO YOU ALIGN OR ADJUST WAVE GENERATING OR SHAPING	40	42	28	30	53	37						
Circuits													
I 542	I1-04 DO YOU CALIBRATE WAVE GENERATING OR SHAPING CIRCUITS	29	30	22	24	35	26						
I 543	I1-05 DO YOU TROUBLESHOOT TO WAVE GENERATING OR SHAPING	41	43	32	32	55	41						
I 544	I1-06 DO YOU TROUBLESHOOT TO WAVE GENERATING OR SHAPING	37	38	27	29	47	37						
I 545	I1-07 DO YOU REMOVE OR REPLACE COMPLETE WAVE GENERATING OR	36	37	27	26	49	37						
Shaping Circuits													
I 546	I1-08 DO YOU REMOVE OR REPLACE WAVE GENERATING OR SHAPING	35	36	25	27	45	33						
Components													
I 547	I1-09 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK	24	26	8	22	29	4						
I 548	I1-10 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN RC	29	31	18	25	37	22						
I 549	I1-11 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN	22	24	15	18	27	15						
Crystals													
I 550	I1-12 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN DON'T	19	20	13	15	27	19						
Remember which type of FDO													
I 551	I1-13 DO YOU WORK WITH ASTABLE MULTIVIBRATORS	33	35	23	27	44	22						
I 552	I1-14 DO YOU WORK WITH MONOSTABLE MULTIVIBRATORS	35	37	23	28	47	22						
I 553	I1-15 DO YOU WORK WITH BISTABLE MULTIVIBRATORS	36	38	27	28	49	26						
I 554	I1-16 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE	14	15	8	11	19	15						
Limiters and Clampers													
I 555	I2-01 DO YOU WORK WITH LIMITERS OR CLAMPERS IN YOUR	38	41	22	32	50	26						
Present Job													
I 556	I2-02 DO YOU WORK WITH SERIES DIODE LIMITERS	27	30	13	20	39	15						
I 557	I2-03 DO YOU WORK WITH SHUNT DIODE LIMITERS	24	27	10	21	30	15						
I 558	I2-04 DO YOU WORK WITH LIMITERS WITH BIAS	22	24	12	19	25	19						
I 559	I2-05 DO YOU WORK WITH ZENER DIODE LIMITERS	28	31	13	23	37	19						
I 560	I2-06 DO YOU WORK WITH TRANSISTOR LIMITERS	26	28	15	20	34	19						
I 561	I2-07 DO YOU WORK WITH DON'T KNOW WHICH TYPE OF LIMITERS	14	15	8	11	19	11						
I 562	I2-08 DO YOU WORK WITH BASIC DIODE CLAMPING CIRCUITS	24	26	10	22	28	11						
I 563	I2-09 DO YOU WORK WITH DIODE CLAMPING CIRCUITS WITH BIAS	21	22	10	19	23	11						
I 564	I2-10 DO YOU WORK WITH DON'T KNOW WHICH TYPE OF CLAMPING	13	14	10	10	18	15						
Electron Tubes													
I 565	I3-01 IN YOUR PRESENT JOB, DO YOU WORK ON EQUIPMENT WHICH	31	35	3	41	25	0						
Contains Electron Tubes													
I 566	I3-02 DO YOU CHECK ELECTRON TUBES TO SEE IF THEY ARE GOOD	24	28	5	28	21	4						

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK		SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006
I 567	13-03 DO YOU USE TUBE TESTERS TO CHECK ELECTRON TUBES	16	18	2	25	8	4
I 568	13-04 DO YOU USE MULTIMETERS TO CHECK ELECTRON TUBES	21	24	3	22	18	0
I 569	13-05 DO YOU USE SCOPES TO CHECK ELECTRON TUBES	20	23	3	22	18	0
I 570	13-06 DO YOU USE SUBSTITUTION TO CHECK ELECTRON TUBES	24	27	5	29	19	4
I 571	13-07 DO YOU USE OR REFER TO CUTOFF	13	15	3	15	9	0
I 572	13-08 DO YOU USE OR REFER TO PEAK INVERSE VOLTAGE RATING	9	9	3	11	5	0
I 573	13-09 DO YOU USE OR REFER TO PEAK CURRENT RATING	9	11	3	13	6	0
I 574	13-10 DO YOU USE OR REFER TO TRANSIT TIME	9	10	3	10	7	0
I 575	13-11 DO YOU USE OR REFER TO PLATE DISSIPATION RATING	8	9	3	10	6	0
I 576	13-12 DO YOU USE OR REFER TO SATURATION	15	17	3	17	11	0
I 577	13-13 DO YOU USE OR REFER TO DC PLATE RESISTANCE	11	12	3	13	7	0
I 578	13-14 DO YOU COMPUTE ACTUAL VALUES OF THE DC PLATE RESISTANCE FOR ELECTRON TUBES	4	5	0	5	2	0
I 579	13-15 DO YOU USE OR REFER TO PLATE VOLTAGE	22	25	3	27	17	0
I 580	13-16 DO YOU USE OR REFER TO PLATE CURRENT	18	20	3	22	13	0
I 581	13-17 DO YOU USE OR REFER TO GRID VOLTAGE	21	24	3	27	15	0
I 582	13-18 DO YOU USE OR REFER TO GRID CURRENT	18	20	3	22	12	0
I 583	13-19 DO YOU USE OR REFER TO CATHODE VOLTAGE	22	25	3	27	17	0
I 584	13-20 DO YOU USE OR REFER TO CATHODE CURRENT	18	20	3	22	13	0
I 585	13-21 DO YOU USE OR REFER TO THE TRIODE AMPLIFICATION FACTOR (THE AMPLIFICATION FACTOR FOR TRIODES IS DEFINED AS	5	6	0	7	4	0
I 586	13-22 DO YOU CALCULATE ACTUAL VALUES OF TRIODE AMPLIFICATION FACTORS	2	3	0	3	1	0
I 587	13-23 DO YOU USE OR REFER TO MULTIGRID (TETRODE, PENTODE, ETC) AMPLIFICATION FACTORS	5	6	0	6	5	0
I 588	13-24 DO YOU USE OR REFER TO ELECTRON TUBE TRANSCONDUCTANCE (G, WHICH IS MEASURED IN MHOS)	3	3	0	3	3	0
I 589	13-25 DO YOU CALCULATE ACTUAL VALUES OF ELECTRON TUBE TRANSCONDUCTANCES	2	2	0	3	1	0
I 590	13-26 DO YOU USE OR REFER TO THE ELECTRON TUBE PARAMETER CALLED AC PLATE RESISTANCE	5	5	2	5	3	4
I 591	13-27 DO YOU CALCULATE ACTUAL VALUES OF AC PLATE RESISTANCE	3	3	0	5	1	0
I 592	13-28 DO YOU USE OR REFER TO ELECTRON TUBE INTERELECTRODE CAPACITANCE	6	7	2	9	3	4
I 593	13-29 DO YOU USE OR REFER TO CHARACTERISTIC CURVES IN YOUR WORK WITH ELECTRON TUBES	4	4	3	5	3	0
I 594	13-30 DO YOU USE CHARACTERISTIC CURVES TO SELECT PLATE VOLTAGE FOR A SPECIFIED BIAS	5	6	3	6	5	0
I 595	13-31 DO YOU USE CHARACTERISTIC CURVES TO SELECT PLATE CURRENT FOR A SPECIFIED BIAS	5	6	3	6	5	0
I 596	13-32 DO YOU USE CHARACTERISTIC CURVES TO SELECT BIAS REQUIRED FOR CUTOFF	5	6	3	6	5	0
I 597	13-33 DO YOU USE CHARACTERISTIC CURVES TO SELECT BIAS REQUIRED FOR SATURATION	5	6	3	6	5	0

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006
I 598 13-34 DO YOU USE OR REFER TO ELECTRON TUBE AMPLIFIER GAIN	17	19	5	20	12	4
I 599 13-35 DO YOU USE OR REFER TO ELECTRON TUBE AMPLIFIER EFFICIENCY	11	12	3	14	8	0
I 600 13-36 DO YOU USE TEST TUBE CHECKERS TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN	11	13	0	20	5	0
I 601 13-37 DO YOU USE MULTIMETERS TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN	14	16	3	18	10	0
I 602 13-38 DO YOU USE OSCILLOSCOPES TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN	19	22	5	23	17	4
I 603 13-39 DO YOU USE CHARACTERISTIC CURVES TO DETERMINE ELECTRON TUBE AMPLIFIER GAIN	7	7	3	7	7	0
I 604 13-40 DO YOU CALCULATE ANY ELECTRON TUBE CAPACITANCES SUCH AS INPUT CAPACITANCE	2	2	0	3	1	0
I 605 13-41 DO YOU USE OR REFER TO TUBE SOCKET NOTATION	20	24	0	26	17	0
I 606 13-42 DO YOU USE OR REFER TO PIN NUMBERING SYSTEMS	24	28	2	30	19	4
I 607 13-43 DO YOU USE OR REFER TO THE TYPE OF MATERIAL OR THE OPERATING TEMPERATURE OF THE EMITTING SURFACE IN THE	5	6	0	7	4	0
I 608 13-44 DO YOU USE OR REFER TO TUBE SUBSTITUTION MATERIAL SUCH AS MANUALS OR CHARTS	10	12	0	15	6	0
J 609 J1-01 DO YOU WORK WITH ELECTRON TUBE AMPLIFIERS OR CIRCUITS IN YOUR PRESENT JOB	19	22	3	25	12	0
J 610 J1-02 DO YOU DETERMINE THE CLASS OF OPERATION FOR ELECTRON TUBE AMPLIFIERS IN ORDER TO TROUBLESHOOT AMPLIFIER	7	7	3	7	5	0
J 611 J1-03 DO YOU TROUBLESHOOT OR REPAIR PARAPHASE AMPLIFIERS	10	11	5	12	5	4
J 612 J1-04 DO YOU TROUBLESHOOT OR REPAIR PUSH-PULL AMPLIFIERS	13	14	3	16	6	0
J 613 J1-05 DO YOU TROUBLESHOOT OR REPAIR COMPOUND-CONNECTED AMPLIFIERS	10	11	3	15	3	0
J 614 J1-06 DO YOU TROUBLESHOOT OR REPAIR CASCADE-CONNECTED AMPLIFIERS	12	13	3	18	4	0
J 615 J1-07 DO YOU TROUBLESHOOT OR REPAIR DON'T KNOW WHICH TYPE OF AMPLIFIER	7	8	0	7	4	0
J 616 J2-01 DO YOU WORK WITH GAS TUBES (HOT CATHODE OR COLD CATHODE)	15	17	3	20	7	4
J 617 J2-02 DO YOU WORK WITH CATHODE-RAY TUBES	27	30	8	27	32	4
J 618 J2-03 DO YOU USE OR REFER TO THE CHARACTERISTICS OF BEAM POWER TUBES	7	9	0	11	4	0
J 619 J2-04 DO YOU TROUBLESHOOT OR REPAIR CIRCUITS IN WHICH BEAM POWER TUBES ARE USED	8	9	2	12	3	4
J 620 J2-05 DO YOU USE OR REFER TO THE CHARACTERISTICS OF THYRATRONS	5	6	0	8	3	0
J 621 J2-06 DO YOU TROUBLESHOOT OR REPAIR CIRCUITS IN WHICH THYRATRONS ARE USED	6	7	0	10	3	0
J 622 J2-07 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTRON GUNS OF CATHODE-RAY TUBES (CRT)	19	19	17	20	17	11
J 623 J2-08 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTROMAGNETIC DEFLECTION SYSTEMS OF CATHODE-RAY TUBES	20	21	15	21	21	7

ELECTRON TUBE AMPLIFIERS
AND CIRCUITS

SPECIAL PURPOSE ELECTRON TUBES

TASK GROUP SUMMARY

DY-TSK

DY-TSK		SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
		001	002	003	004	005	006	007	008
J	624	J2-09	DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTROSTATIC DEFLECTION SYSTEMS OF CATHODE-RAY TUBES	17	18	15	19	15	7
J	625	J2-10	DO YOU USE OR REFER TO PHOSPHOR SCREENS	21	22	17	23	21	7
J	626	J2-11	DO YOU USE OR REFER TO AQUADAG COATINGS	12	13	5	10	16	0
J	627	J2-12	DO YOU USE OR REFER TO ELECTRON OPTICS	8	9	5	9	9	0
J	628	J2-13	DO YOU USE OR REFER TO PERSISTENCE	16	19	13	20	19	0
J	629	J2-14	DO YOU USE OR REFER TO DECAY TIMES	12	13	8	13	13	0
J	630	J2-15	DO YOU USE OR REFER TO FLUORESCENCE	14	15	8	16	14	0
J	631	J2-16	DO YOU USE OR REFER TO PHOSPHORESCENCE	16	17	10	18	16	0
J	632	J3-01	DO YOU WORK ON TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB	74	75	63	74	82	7
J	633	J3-02	DO YOU PERFORM TASKS ON FREQUENCY CONVERTERS	44	46	35	41	51	48
J	634	J3-03	DO YOU PERFORM TASKS ON FREQUENCY MIXERS	44	45	37	41	50	48
J	635	J3-04	DO YOU USE OR REFER TO THE METERDYNAMING OF SIGNALS IN YOUR WORK WITH TRANSMIT OR RECEIVE SYSTEMS	40	41	28	39	43	44
J	636	J3-05	DO YOU PERFORM TASKS ON REACTANCE MODULATORS	17	18	10	18	15	7
J	637	J3-06	DO YOU PERFORM TASKS ON MODULATED OSCILLATORS	35	36	28	34	39	33
K	638	K1-01	DO YOU WORK ON AM TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB	47	49	35	52	49	41
K	639	K1-02	DO YOU INSPECT AM TRANSMIT OR RECEIVE SYSTEMS	44	45	33	44	49	37
K	640	K1-03	DO YOU CLEAN AM TRANSMIT OR RECEIVE SYSTEMS	39	42	20	40	46	19
K	641	K1-04	DO YOU ALIGN OR ADJUST AM TRANSMIT OR RECEIVE SYSTEMS	41	43	30	39	49	33
K	642	K1-05	DO YOU TROUBLESHOOT TO AM TRANSMIT OR RECEIVE SYSTEMS	44	46	33	45	49	37
K	643	K1-06	DO YOU TROUBLESHOOT TO AM TRANSMIT OR RECEIVE COMPONENTS	37	38	30	34	43	33
K	644	K1-07	DO YOU REMOVE OR REPLACE AM TRANSMIT OR RECEIVE SYSTEMS	43	46	28	46	47	33
K	645	K1-08	DO YOU REMOVE OR REPLACE AM TRANSMIT OR RECEIVE COMPONENTS	37	39	28	35	43	30
K	646	K1-09	DO YOU PERFORM TASKS ON RF OSCILLATORS	31	34	17	29	39	22
K	647	K1-10	DO YOU PERFORM TASKS ON RF AMPLIFIERS	34	37	20	32	41	22
K	648	K1-11	DO YOU PERFORM TASKS ON AUDIO AMPLIFIERS	23	26	8	22	29	4
K	649	K1-12	DO YOU PERFORM TASKS ON POWER AMPLIFIERS	31	33	20	27	39	22
K	650	K1-13	DO YOU PERFORM TASKS ON LOCAL OSCILLATORS	31	33	20	29	38	22
K	651	K1-14	DO YOU PERFORM TASKS ON IF AMPLIFIERS	30	32	15	28	38	26
K	652	K1-15	DO YOU PERFORM TASKS ON DETECTORS	34	36	23	31	43	26
K	653	K1-16	DO YOU PERFORM TASKS ON DON'T REMEMBER WHICH AM STAGE TRANSMITTERS	10	11	10	11	10	15
K	654	K1-17	DO YOU USE OR REFER TO AMPLITUDE STABILIZATION IN TRANSMITTERS	22	23	13	20	28	15
K	655	K1-18	DO YOU USE OR REFER TO FREQUENCY STABILIZATION IN TRANSMITTERS	23	25	17	22	29	15
K	656	K1-19	DO YOU USE OR REFER TO SENSITIVITY OF RECEIVERS	40	44	20	43	47	22
K	657	K1-20	DO YOU USE OR REFER TO SELECTIVITY OF RECEIVERS	37	40	20	39	43	22
K	658	K1-21	DO YOU USE OR REFER TO 2ND HARMONIC DISTORTION	21	24	5	24	23	4
K	659	K1-22	DO YOU USE OR REFER TO BANDPASS DISTORTION	27	29	15	32	27	19
K	660	K1-23	DO YOU USE OR REFER TO SQUARE LAW DISTORTION	9	9	17	9	9	4

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK									
SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
001	002	003	004	005	006	007	008	009	010
FM SYSTEMS									
K 661	K1-24	DO YOU USE OR REFER TO CO-CHANNEL INTERFERENCE	16	16	12	15	16	15	
K 662	K1-25	DO YOU USE OR REFER TO IMAGE FREQUENCIES IN RECEIVERS	22	24	12	22	23	11	
K 663	K1-26	DO YOU USE OR REFER TO SIGNAL TO IMAGE RATIOS OR IMAGE REJECTION RATIOS	17	17	12	18	14	11	
K 664	K1-27	DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH AM TRANSMITTER SCHEMATIC DIAGRAMS	29	30	23	27	36	22	
K 665	K1-28	DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH AM RECEIVER SCHEMATIC DIAGRAMS	36	39	23	35	43	33	
K 666	K2-01	DO YOU WORK WITH FM TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB	50	54	28	55	57	37	
K 667	K2-02	DO YOU INSPECT FM TRANSMIT OR RECEIVE SYSTEMS	48	52	26	52	54	33	
K 668	K2-03	DO YOU CLEAN FM TRANSMIT OR RECEIVE SYSTEMS	43	47	17	45	52	26	
K 669	K2-04	DO YOU ALIGN FM TRANSMIT OR RECEIVE SYSTEMS	44	47	23	42	54	33	
K 670	K2-05	DO YOU TROUBLESHOOT TO FM TRANSMIT OR RECEIVE SYSTEMS	48	52	28	52	55	37	
K 671	K2-06	DO YOU TROUBLESHOOT TO FM TRANSMIT OR RECEIVE COMPONENTS	41	43	25	40	47	37	
K 672	K2-07	DO YOU REMOVE OR REPLACE FM TRANSMIT OR RECEIVE SYSTEMS	47	52	22	52	53	33	
K 673	K2-08	DO YOU REMOVE OR REPLACE FM TRANSMIT OR RECEIVE COMPONENTS	40	43	25	40	45	37	
K 674	K2-09	DO YOU PERFORM TASKS ON AUDIO AMPLIFIERS	29	32	10	30	34	11	
K 675	K2-10	DO YOU PERFORM TASKS ON FREQUENCY MULTIPLIERS	29	31	18	30	32	26	
K 676	K2-11	DO YOU PERFORM TASKS ON DRIVERS (INTERMEDIATE AMPLIFIERS)	34	36	23	31	41	33	
K 677	K2-12	DO YOU PERFORM TASKS ON POWER AMPLIFIERS	35	37	23	32	43	30	
K 678	K2-13	DO YOU PERFORM TASKS ON RF AMPLIFIERS	38	42	17	36	49	22	
K 679	K2-14	DO YOU PERFORM TASKS ON FREQUENCY CONVERTERS	31	34	17	30	37	22	
K 680	K2-15	DO YOU PERFORM TASKS ON IF AMPLIFIERS	34	37	18	34	39	30	
K 681	K2-16	DO YOU PERFORM TASKS ON LIMITERS	29	32	12	30	33	15	
K 682	K2-17	DO YOU PERFORM TASKS ON FREQUENCY DISCRIMINATORS	30	33	12	31	35	11	
K 683	K2-18	DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SCHEMATIC DIAGRAMS OF FM TRANSMITTERS	33	35	20	31	42	26	
K 684	K2-19	DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SCHEMATIC DIAGRAMS OF FM RECEIVERS	39	43	18	39	48	30	
K 685	K3-01	DO YOU CONVERT DECIMAL (BASE 10) NUMBERS TO OCTAL (BASE 8) NUMBERS	16	17	10	9	26	15	
K 686	K3-02	DO YOU CONVERT DECIMAL NUMBERS TO BINARY (BASE 2) NUMBERS	23	24	13	15	35	15	
K 687	K3-03	DO YOU CONVERT OCTAL NUMBERS TO DECIMAL NUMBERS	14	15	5	9	23	4	
K 688	K3-04	DO YOU CONVERT OCTAL NUMBERS TO BINARY NUMBERS	15	16	7	10	25	4	
K 689	K3-05	DO YOU CONVERT BINARY NUMBERS TO DECIMAL NUMBERS	21	23	7	14	33	4	
K 690	K3-06	DO YOU CONVERT BINARY NUMBERS TO OCTAL NUMBERS	14	16	5	10	24	4	
K 691	K3-07	DO YOU ADD BINARY NUMBERS TO GET A SUM	15	17	8	13	21	11	
K 692	K3-08	DO YOU SUBTRACT BINARY NUMBERS USING THE END-AROUND-CARRY METHOD	11	12	7	9	15	7	
K 693	K3-09	DO YOU SUBTRACT BINARY NUMBERS USING THE DIRECT SUBTRACTION METHOD	13	14	6	10	19	11	

NUMBERING SYSTEMS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

		UY-TSK											
		SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
		001	002	003	004	005	006	007	008	009	010	011	012
K 694	K3-10 DO YOU ADD OCTAL NUMBERS TO GET A SUM	10	11	5	8	14	4						
L 695	L1-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS RELATING TO LOGIC FUNCTIONS	37	35	43	24	53	52						
L 696	L1-02 DO YOU CONSTRUCT TRUTH TABLES FOR AND LOGIC SYMBOLS	18	17	23	12	25	22						
L 697	L1-03 DO YOU CONSTRUCT TRUTH TABLES FOR OR LOGIC SYMBOLS	18	17	23	12	25	22						
L 698	L1-04 DO YOU CONSTRUCT TRUTH TABLES FOR AND OR LOGIC SYMBOLS WITH STATE INDICATORS	18	17	23	12	24	22						
L 699	L1-05 DO YOU CONSTRUCT TRUTH TABLES FOR EXCLUSIVE OR LOGIC SYMBOLS OR GATES	17	17	18	12	25	15						
L 700	L1-06 DO YOU USE OR REFER TO TRUTH TABLES FOR AND LOGIC SYMBOLS OR GATES	27	26	30	16	40	37						
L 701	L1-07 DO YOU USE OR REFER TO TRUTH TABLES FOR OR LOGIC SYMBOLS OR GATES	27	26	32	16	40	41						
L 702	L1-08 DO YOU USE OR REFER TO TRUTH TABLES FOR AND OR LOGIC SYMBOLS WITH STATE INDICATORS	26	26	28	16	39	33						
L 703	L1-09 DO YOU USE OR REFER TO TRUTH TABLES FOR EXCLUSIVE OR LOGIC SYMBOLS	26	25	28	16	39	37						
L 704	L1-10 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR AND GATES	34	33	42	22	49	56						
L 705	L1-11 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR OR GATES	34	33	40	22	50	52						
L 706	L1-12 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR AND OR NOR GATES	34	32	42	20	50	56						
L 707	L1-13 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR EXCLUSIVE OR GATES	33	32	38	21	50	52						
L 708	L2-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS RELATING TO BOOLEAN EQUATIONS, LOGIC DIAGRAMS, OR LOGIC	24	24	18	17	35	11						
L 709	L2-02 DO YOU DRAW LOGIC SYMBOLS FOR DIRECT COUPLED TRANSISTOR LOGIC (DCTL) CIRCUITS	9	9	7	7	11	7						
L 710	L2-03 DO YOU CONSTRUCT TRUTH TABLES FOR CURRENT MODE LOGIC (CML) CIRCUITS	7	6	10	5	9	7						
L 711	L2-04 DO YOU DRAW LOGIC DIAGRAMS FROM GIVEN BOOLEAN EQUATIONS	8	8	10	6	10	11						
L 712	L2-05 DO YOU MEASURE INPUTS OR OUTPUTS OF LOGIC GATES	22	23	13	15	33	15						
L 713	L2-06 DO YOU DEVELOP OR ANALYZE BOOLEAN EQUATIONS IN THE PROCESS OF TROUBLESHOOTING DIGITAL CIRCUITS	13	13	12	10	19	11						
L 714	L2-07 DO YOU ANALYZE LOGIC CIRCUITS BY USING BOOLEAN ALGEBRA	12	13	10	9	18	11						
L 715	L2-08 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR DIRECT COUPLED TRANSISTOR LOGIC (DCTL) CIRCUIT GATES	17	17	12	11	25	15						
L 716	L2-09 DO YOU USE OR REFER TO TRUTH TABLES FOR CURRENT MODE LOGIC (CML) CIRCUITS	9	9	12	7	12	11						
L 717	L2-10 DO YOU USE OR REFER TO LOGIC DIAGRAMS CONSISTING OF MORE THAN ONE GATE	23	23	17	16	33	15						
L 718	L2-11 DO YOU COMPUTE SUM AND CARRY EXPRESSIONS FOR SERIAL HALF OR FULL ADDER LOGIC DIAGRAMS	8	8	5	5	11	4						

BOOLEAN EQUATIONS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

BY-TSK

SPC SPC SPC SPC SPC SPC
001 002 003 004 005 006

12 12 8 9 17 7

L 719 L2-12 DO YOU TRACE DATA FLOW THROUGH PARALLEL FULL ADDER
LOGIC DIAGRAMS

L 720 L2-13 DO YOU WORK WITH ASTABLE (FREE RUNNING)
MULTIVIBRATORS

24 25 17 15 36 11

L 721 L2-14 DO YOU WORK WITH BISTABLE (FLIP-FLOP) MULTIVIBRATORS
L 722 L2-15 DO YOU WORK WITH MONOSTABLE (ONE-SHOT)
MULTIVIBRATORS

25 26 17 15 37 11

24 25 15 15 36 7

L 723 L2-16 DO YOU USE OR REFER TO FLIP-FLOP MULTIVIBRATOR
SYMBOLS

23 24 17 15 33 11

L 724 L2-17 DO YOU USE OR REFER TO SINGLE-SHOT MULTIVIBRATOR
SYMBOLS

22 23 15 15 32 7

L 725 L2-18 DO YOU USE OR REFER TO FLIP-FLOP CIRCUIT DIAGRAMS
L 726 L2-19 DO YOU USE OR REFER TO FLIP-FLOP TRUTH TABLES

24 24 18 15 34 15

L 727 L2-20 DO YOU USE OR REFER TO COMPLEMENTED FLIP-FLOP
LOGIC SYMBOLS

17 18 12 13 23 7

L 728 L2-21 DO YOU USE OR REFER TO COMPLEMENTING FLIP-FLOP LOGIC
SYMBOLS

18 19 13 14 25 7

L 729 L2-22 DO YOU MEASURE OUTPUT WAVESHAPES OF LOGIC CIRCUITS
L 730 L2-23 DO YOU TRACE DATA FLOW THROUGH COMPLEMENTED FLIP-FLOP
SCHEMATIC DIAGRAMS

24 24 18 17 34 15

L 731 L2-24 DO YOU TRACE DATA FLOW THROUGH COMPLEMENTING FLIP-
FLOP SCHEMATIC DIAGRAMS

19 20 12 15 25 7

L 732 L2-25 DO YOU CONSTRUCT TRUTH TABLES FOR J-K FLIP-FLOP
LOGIC SYMBOLS

11 12 10 8 16 7

L 733 L3-01 DO YOU WORK WITH DIGITAL COUNTERS IN YOUR PRESENT JOB
L 734 L3-02 DO YOU USE OR REFER TO UP-COUNTERS

36 37 30 27 50 33

L 735 L3-03 DO YOU USE OR REFER TO DOWN-COUNTERS
L 736 L3-04 DO YOU USE OR REFER TO SERIAL COUNTERS

32 33 30 21 49 33

L 737 L3-05 DO YOU USE OR REFER TO PARALLEL COUNTERS
L 738 L3-06 DO YOU USE OR REFER TO RING COUNTERS

32 32 30 21 47 33

L 739 L3-07 DO YOU USE OR REFER TO DECADE COUNTERS
L 740 L3-08 DO YOU USE OR REFER TO COUNT DETECT CIRCUITS

29 30 25 22 40 33

L 741 L3-09 DO YOU USE OR REFER TO DOWN CLOCKS
L 742 L3-10 DO YOU USE OR REFER TO UP CLOCKS

24 25 18 18 33 26

L 743 L3-11 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF
UP-COUNTERS HAVING COMPLEMENTED FLIP-FLOPS

18 19 15 12 28 19

L 744 L3-12 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF
SERIAL UP- OR DOWN-COUNTERS HAVING COMPLEMENTING FLIP-
FLOP SCHEMATIC DIAGRAMS

22 22 22 15 31 22

L 745 L3-13 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF
DECADE COUNTERS

31 31 30 19 47 33

L 746 L3-14 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF
RING COUNTERS

31 31 30 19 47 33

L 747 L3-15 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF
SERIAL UP-COUNTERS FEEDING A PARALLEL STORAGE REGISTER

21 21 23 15 29 30

L 748 L3-16 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF
SHIFT REGISTERS

21 21 25 15 28 33

L 749 L3-17 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF
SERIAL UP-COUNTERS FEEDING A PARALLEL STORAGE REGISTER

18 18 15 12 25 19

L 750 L3-18 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF
SHIFT REGISTERS

15 16 13 11 21 19

L 751 L3-19 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF
SERIAL UP-COUNTERS FEEDING A PARALLEL STORAGE REGISTER

18 19 17 14 23 19

L 752 L3-20 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF
SHIFT REGISTERS

20 21 15 15 29 15

COUNTERS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK							
SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006		
L 749	L3-17	DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF OTHER TYPE OF COUNTERS	17	17	15	21	26
L 750	L3-18	DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR UP-COUNTERS HAVING COMPLEMENTED FLIP-FLOPS	14	14	12	11	11
L 751	L3-19	DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR SERIAL UP- OR DOWN-COUNTERS HAVING COMPLEMENT- PULSES FOR SERIAL UP-COUNTERS AFTER SPECIFIC INPUT	13	14	10	11	16
L 752	L3-20	DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR SERIAL UP-COUNTERS FEEDING A PARALLEL STORAGE	13	14	10	11	11
L 753	L3-21	DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT PULSES FOR OTHER TYPES OF COUNTERS	12	12	13	10	15
L 754	L3-22	DO YOU CONSTRUCT TRUTH TABLES FROM LOGIC DIAGRAMS OF DECADE COUNTERS	7	7	7	7	8
L 755	L3-23	DO YOU DETERMINE THE STATE OF EACH FLIP-FLOP IN RING COUNTERS FOR SPECIFIC INPUT PULSES	12	12	10	10	14
L 756	L3-24	DO YOU DETERMINE THE APPROPRIATE AND GATE NECESSARY IN COUNT DETECT CIRCUITS TO INDICATE A REQUIRED COUNT	13	13	12	11	16
M 757	M1-01	DO YOU WORK WITH SAWTOOTH WAVE GENERATORS	52	53	43	45	63
M 758	M1-02	DO YOU WORK WITH TRAPEZOIDAL WAVE GENERATORS	24	25	17	21	31
M 759	M1-03	DO YOU WORK WITH PULSED OSCILLATORS WITH REGENERATIVE FEEDBACK	28	29	22	23	35
M 760	M1-04	DO YOU WORK WITH PULSED OSCILLATORS WITHOUT REGENERATIVE FEEDBACK	27	28	20	23	33
M 761	M1-05	DO YOU WORK WITH BLOCKING OSCILLATORS	36	37	23	28	49
M 762	M1-06	DO YOU USE OR REFER TO RISE TIME	44	45	43	36	57
M 763	M1-07	DO YOU USE OR REFER TO FALL OR FLYBACK TIME	43	43	38	38	51
M 764	M1-08	DO YOU USE OR REFER TO SLEEP TIME	54	54	52	48	63
M 765	M1-09	DO YOU USE OR REFER TO ELECTRICAL LENGTH OF SAWTOOTH WAVEFORMS	39	39	37	34	46
M 766	M1-10	DO YOU USE OR REFER TO PHYSICAL LENGTH OF SAWTOOTH WAVEFORMS	43	43	42	38	51
M 767	M1-11	DO YOU USE OR REFER TO LINEAR SLOPE OF SAWTOOTH WAVEFORMS	37	39	23	36	43
M 768	M1-12	DO YOU USE OR REFER TO GATE LENGTH OF SAWTOOTH WAVEFORMS	32	33	23	27	40
M 769	M2-01	DO YOU USE SIGNAL GENERATORS IN YOUR PRESENT JOB	68	69	63	63	81
M 770	M2-02	DO YOU PERFORM OPERATIONAL CHECKS WHILE USING SIGNAL GENERATORS	63	64	57	58	75
M 771	M2-03	DO YOU PERFORM PERIODIC MAINTENANCE SUCH AS ADJUSTING, ALIGNING, OR CALIBRATING WHILE USING SIGNAL	42	43	35	38	51
M 772	M2-04	DO YOU TROUBLESHOOT TO AN ASSEMBLY OR SUBASSEMBLY WHILE USING SIGNAL GENERATORS	42	42	42	36	51
M 773	M2-05	DO YOU TROUBLESHOOT TO THE SMALLEST REPLACEABLE COMPONENT WHILE USING SIGNAL GENERATORS	29	29	25	23	37
M 774	M2-06	DO YOU USE AUDIO SINE-WAVE GENERATORS	25	26	15	23	28

TIMING CIRCUITS

USE OF SIGNAL GENERATORS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

SPC SPC SPC SPC SPC SPC
001 002 003 004 005 006

0Y-15K

M 775 H2-07 DO YOU USE AUDIO NON-SINUSOIDAL WAVE GENERATORS SUCH AS SQUARE WAVE, TRIANGLE, PULSE, OR SPIKE
M 776 H2-08 DO YOU USE RF GENERATORS LESS THAN 1,000 MH
M 777 H2-09 DO YOU USE RF GENERATORS GREATER THAN 1,000 MH
M 778 H2-10 DO YOU USE OTHER SPECIAL PURPOSE OR MULTI-FUNCTION GENERATORS

GENERATORS

M 779 H3-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH ALTERNATING CURRENT OR DIRECT CURRENT MOTORS OR
M 780 H3-02 DO YOU INSPECT MOTORS
M 781 H3-03 DO YOU CLEAN OR LUBRICATE MOTORS
M 782 H3-04 DO YOU OPERATE MOTORS
M 783 H3-05 DO YOU REMOVE OR REPLACE COMPLETE MOTORS
M 784 H3-06 DO YOU REMOVE OR REPLACE MOTOR PARTS
M 785 H3-07 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS OF MOTORS

M 786 H3-08 DO YOU TROUBLESHOOT DOWN TO COMPONENT PARTS OF MOTORS
M 787 H3-09 DO YOU PERFORM ANY TASKS ON FIELD COILS
M 788 H3-10 DO YOU PERFORM ANY TASKS ON ARMATURES
M 789 H3-11 DO YOU PERFORM ANY TASKS ON ROTORS
M 790 H3-12 DO YOU PERFORM ANY TASKS ON BRUSHES
M 791 H3-13 DO YOU PERFORM ANY TASKS ON SLIP RINGS
M 792 H3-14 DO YOU PERFORM ANY TASKS ON COMMUTATORS
M 793 H3-15 DO YOU PERFORM ANY TASKS ON POLE PIECES
M 794 H3-16 DO YOU DETERMINE OR MEASURE THE MAGNITUDE OF THE FORCE OR TORQUE CREATED BY A MOTOR

M 795 H3-17 DO YOU DETERMINE OR MEASURE THE DIRECTION OF THE MECHANICAL FORCE OR TORQUE CREATED BY A MOTOR
M 796 H3-18 DO YOU DETERMINE OR MEASURE THE MAGNITUDE OR DIRECTION OF THE INDUCED VOLTAGE IN MOTORS

M 797 H3-19 DO YOU WORK WITH SYNCHRONOUS MOTORS
M 798 H3-20 DO YOU WORK WITH INDUCTION MOTORS
M 799 H3-21 DO YOU WORK WITH SPLIT-PHASE MOTORS
M 800 H3-22 DO YOU WORK WITH SOME COMBINATION OF THE ABOVE MOTORS
M 801 H3-23 DO YOU INSPECT GENERATORS

M 802 H3-24 DO YOU CLEAN OR LUBRICATE GENERATORS
M 803 H3-25 DO YOU OPERATE GENERATORS

M 804 H3-26 DO YOU REMOVE OR REPLACE COMPLETE GENERATORS
M 805 H3-27 DO YOU REMOVE OR REPLACE GENERATOR PARTS
M 806 H3-28 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS OF GENERATORS

M 807 H3-29 DO YOU TROUBLESHOOT DOWN TO COMPONENT PARTS OF GENERATORS

M 808 H1-01 DO YOU WORK WITH METERS IN YOUR PRESENT JOB
M 809 H1-02 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF PERMANENT MAGNETS
M 810 H1-03 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF MOVING COILS

METER MOVEMENTS

PCT MEMBERS RESPONDING 'YES' BY SELECTED GPS

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TASK GROUP SUMMARY PERCENT MEMBERS PERFORMING

DY-TSK		SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
		001	002	003	004	005	006	007	008
N 811	N1-04 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF SPIRAL SPRINGS	19	19	17	18	19	11		
N 812	N1-05 DO YOU READ METER SCALES	76	74	75	73	80	78		
N 813	N1-06 DO YOU EXTEND THE RANGE OF AMMETERS	30	30	28	32	28	22		
N 814	N1-07 DO YOU ZERO OHMMETERS	75	75	77	72	79	81		
N 815	N1-08 DO YOU ZERO AMMETERS	34	35	32	36	35	37		
N 816	N1-09 DO YOU EXTEND THE RANGE OF VOLTMETERS	45	46	45	44	45	37		
N 817	N1-10 DO YOU USE OR REFER TO VOLTMETER SENSITIVITY (EXPRESSED IN UNITS OF OHMS PER VOLT)	43	44	35	40	49	37		
N 818	N2-01 DO YOU WORK WITH SATURABLE REACTORS OR MAGNETIC AMPLIFIERS IN YOUR PRESENT JOB	12	13	3	12	13	0		
N 819	N2-02 DO YOU INSPECT MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	10	11	3	9	12	0		
N 820	N2-03 DO YOU CLEAN MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	9	10	2	8	10	0		
N 821	N2-04 DO YOU ADJUST MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	7	7	3	5	6	0		
N 822	N2-05 DO YOU TROUBLESHOOT MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	10	11	3	10	11	0		
N 823	N2-06 DO YOU REMOVE OR REPLACE MAGNETIC AMPLIFIERS OR SATURABLE REACTORS	10	11	3	10	11	0		
N 824	N2-07 DO YOU REMOVE OR REPLACE MAGNETIC AMPLIFIER OR SATURABLE REACTOR COMPONENTS	6	6	3	5	7	0		
N 825	N2-08 DO YOU USE OR REFER TO HYSTERESIS CURVES OR LOOPS	4	5	0	5	5	0		
N 826	N2-09 DO YOU INTERPRET SCHEMATIC DRAWINGS TO DEVELOP OUTPUT WAVEFORMS ACROSS REACTOR WINDINGS OR LOAD RESISTORS OF	7	8	3	7	9	0		
N 827	N2-10 DO YOU MEASURE OUTPUT WAVEFORMS ACROSS REACTOR WINDINGS OR LOAD RESISTORS OF SINGLE WINDING SATURABLE	8	8	3	8	8	0		
N 828	N2-11 DO YOU INTERPRET SCHEMATIC DRAWINGS TO DEVELOP OUTPUT WAVEFORMS FOR MAGNETIC AMPLIFIERS	6	6	3	5	7	0		
N 829	N2-12 DO YOU USE OR REFER TO COERCIVE FORCE IN SATURABLE REACTORS	3	3	3	2	3	0		
N 830	N2-13 DO YOU USE OR REFER TO RESIDUAL MAGNETISM IN SATURABLE REACTORS	4	4	3	2	5	0		
N 831	N2-14 DO YOU USE OR REFER TO FLUX DENSITY IN SATURABLE REACTORS	4	4	3	3	4	0		
N 832	N2-15 DO YOU USE OR REFER TO POINT OF SATURATION IN SATURABLE REACTORS	5	5	3	4	6	0		
N 833	N2-16 DO YOU USE OR REFER TO SATURABLE REACTOR SCHEMATIC SYMBOLS	8	9	3	10	9	0		
N 834	N3-01 DO YOU WORK WITH WAVESHAPING CIRCUITS IN YOUR PRESENT JOB	45	45	42	33	62	52		
N 835	N3-02 DO YOU USE OR REFER TO TRANSIENT INTERVALS	25	26	20	21	31	26		
N 836	N3-03 DO YOU USE OR REFER TO PULSE WIDTH (PW)	45	45	43	33	61	59		
N 837	N3-04 DO YOU USE OR REFER TO PULSE RECURRENCE TIME (PRT)	45	45	43	34	61	59		

WAVESHAPING CIRCUITS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DT-YTK

SPC SPC SPC SPC SPC SPC
001 002 003 004 005 006

N 828 N3-05 DO YOU USE OR REFER TO PULSE RECURRENCE FREQUENCY 45 45 43 34 62 59

(PRF)

N 839 N3-06 DO YOU USE OR REFER TO DIFFERENTIATING CIRCUITS 32 33 25 27 41 37

N 840 N3-07 DO YOU USE OR REFER TO INTEGRATING CIRCUITS 34 34 33 26 43 46

N 841 N3-08 DO YOU USE OR REFER TO THE CLASSIFICATION OF TIME 19 20 13 16 25 15

CONSTANTS (TC) AS LONG, MEDIUM, OR SHORT

N 842 N3-09 DO YOU DETERMINE WHETHER AN LR OR RC CIRCUIT IS 13 14 7 11 17 4

DIFFERENTIATING OR INTEGRATING BASED ON THE TIME CONSTANT

N 843 N3-10 DO YOU WORK WITH SQUARE WAVE GENERATORS 39 39 40 28 54 48

N 844 N3-11 DO YOU WORK WITH RECTANGULAR WAVE GENERATORS 30 29 32 21 41 41

O 845 01-01 DO YOU WORK ON SINGLE SIDEBAND SYSTEMS IN YOUR 6 7 0 4 5 0

PRESENT JOB

O 846 01-02 DO YOU INSPECT SSB TRANSMIT OR RECEIVE SYSTEMS 6 7 2 5 4 4

O 847 01-03 DO YOU CLEAN SSB TRANSMIT OR RECEIVE SYSTEMS 5 6 2 4 4 4

O 848 01-04 DO YOU ALIGN SSB TRANSMIT OR RECEIVE SYSTEMS 5 6 2 3 5 4

O 849 01-05 DO YOU TROUBLESHOOT TO SSB TRANSMIT OR RECEIVE 6 6 2 5 4 4

SYSTEMS

O 850 01-06 DO YOU TROUBLESHOOT TO SSB TRANSMIT OR RECEIVE 5 6 2 4 4 4

COMPONENTS

O 851 01-07 DO YOU REMOVE OR REPLACE SSB TRANSMIT OR RECEIVE 5 6 2 4 3 4

SYSTEMS

O 852 01-08 DO YOU REMOVE OR REPLACE SSB TRANSMIT OR RECEIVE 5 6 2 4 3 4

COMPONENTS

O 853 01-09 DO YOU PERFORM TASKS ON SSB AUDIO AMPLIFIERS 4 4 0 2 3 0

O 854 01-10 DO YOU PERFORM TASKS ON SSB BALANCED MODULATORS 3 4 0 2 3 0

O 855 01-11 DO YOU PERFORM TASKS ON SSB CARRIER OSCILLATORS 4 4 2 2 3 4

O 856 01-12 DO YOU PERFORM TASKS ON SSB LC FILTERS 4 4 2 2 3 4

O 857 01-13 DO YOU PERFORM TASKS ON SSB CRYSTAL FILTERS 4 4 0 2 3 0

O 858 01-14 DO YOU PERFORM TASKS ON SSB MECHANICAL FILTERS 3 3 0 1 3 0

O 859 01-15 DO YOU PERFORM TASKS ON SSB OSCILLATORS 4 5 0 2 4 0

O 860 01-16 DO YOU PERFORM TASKS ON SSB MIXERS 4 5 0 2 4 0

O 861 01-17 DO YOU PERFORM TASKS ON SSB DRIVERS 4 4 0 1 4 0

O 862 01-18 DO YOU PERFORM TASKS ON SSB POWER AMPLIFIERS 4 4 2 1 3 4

O 863 01-19 DO YOU PERFORM TASKS ON SSB RF AMPLIFIERS 4 4 5 0 2 4

O 864 01-20 DO YOU PERFORM TASKS ON SSB FREQUENCY CONVERTERS 4 4 5 2 4 4

O 865 01-21 DO YOU PERFORM TASKS ON SSB IF AMPLIFIERS 5 5 2 2 4 4

O 866 01-22 DO YOU PERFORM TASKS ON SSB DEMODULATORS 4 4 2 2 3 4

O 867 01-23 DO YOU PERFORM TASKS ON SSB DONIT REMEMBER WHICH SSB 2 2 2 2 2 4

SYSTEM STAGES

O 868 01-24 DO YOU USE OR REFER TO SELECTIVE FADING 2 2 2 1 3 4

O 869 01-25 DO YOU USE OR REFER TO PEAK POWER 4 4 2 2 3 4

O 870 01-26 DO YOU USE OR REFER TO FREQUENCY STABILITY 4 4 2 2 4 4

O 871 01-27 DO YOU USE OR REFER TO RESPONSE CURVES FOR 3 3 3 2 1 3

BANDWIDTH FILTERS

O 872 01-28 DO YOU CALCULATE PEAK POWER OR EFFECTIVE POWER OF SSB 2 2 2 1 2 4

TRANSMITTERS

SINGLE SIDEBAND SYSTEMS

P21 MEMBERS RESPONDING 'YES' BY SELECTED GPS

GPS001 PAGE 02

TASK GROUP SUMMARY PERCENT MEMBERS PERFORMING

0Y-75K

	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006
0 873 01-29 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SSB TRANSMITTER SCHEMATIC DIAGRAMS	2	2	2	1	3	4
0 874 01-30 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH SSB RECEIVER SCHEMATIC DIAGRAMS	4	4	2	2	3	4
0 875 02-01 DO YOU WORK ON PULSE MODULATION SYSTEMS IN YOUR PRESENT JOB	29	29	28	24	35	37
0 876 02-02 DO YOU INSPECT PULSE MODULATION SYSTEMS	26	26	27	22	31	33
0 877 02-03 DO YOU CLEAN PULSE MODULATION SYSTEMS	23	23	23	18	27	30
0 878 02-04 DO YOU ALIGN PULSE MODULATION SYSTEMS	26	26	27	19	33	33
0 879 02-05 DO YOU TROUBLESHOOT TO PULSE MODULATION SYSTEMS	28	28	27	23	34	33
0 880 02-06 DO YOU TROUBLESHOOT TO PULSE MODULATION SYSTEM COMPONENTS	21	20	25	14	27	33
0 881 02-07 DO YOU REMOVE OR REPLACE PULSE MODULATION SYSTEMS	25	27	16	22	32	22
0 882 02-08 DO YOU REMOVE OR REPLACE PULSE MODULATION SYSTEM COMPONENTS	20	20	25	13	26	33
0 883 02-09 DO YOU WORK ON PULSE-AMPLITUDE MODULATION (PAM) SYSTEMS	21	22	17	19	25	15
0 884 02-10 DO YOU WORK ON PULSE-DURATION MODULATION (PDM) SYSTEMS	14	14	15	15	13	19
0 885 02-11 DO YOU WORK ON PULSE-POSITION MODULATION (PPM) SYSTEMS	13	14	8	12	15	7
0 886 02-12 DO YOU WORK ON PULSE-CODE MODULATION (PCM) SYSTEMS	10	11	8	8	12	11
0 887 02-13 DO YOU WORK ON LINE PULSING MODULATION SYSTEMS	9	9	5	9	8	11
0 888 02-14 DO YOU WORK ON DON'T REMEMBER WHICH TYPE OF MODULATION SYSTEM	10	10	8	9	10	19
0 889 02-15 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM POWER SUPPLIES	19	20	13	17	24	19
0 890 02-16 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM CHARGING CHOKES AND CHARGING DIODES	9	10	5	9	9	4
0 891 02-17 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM PULSE FORMING NETWORKS	18	19	17	14	23	26
0 892 02-18 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM TIMERS	14	14	13	10	17	19
0 893 02-19 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM SWITCHES SUCH AS GAS THYRATRONS	4	4	2	5	3	4
0 894 02-20 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM PULSE TRANSFORMERS	9	9	8	10	7	11
0 895 02-21 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM TRANSMITTER TUBES	13	13	13	12	14	22
0 896 02-22 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM RF AMPLIFIERS	19	19	20	15	23	30
0 897 02-23 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM FREQUENCY CONVERTERS	16	15	20	11	18	26
0 898 02-24 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM IF AMPLIFIERS	17	16	18	12	20	30
0 899 02-25 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM DETECTORS	18	18	23	13	22	33

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

SPC SPC SPC SPC SPC SPC
001 002 003 004 005 006

BY-TSK

0 900 02-26 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM VIDEO AMPLIFIERS	19	19	22	14	23	30
0 901 02-27 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM POWER VIDEO AMPLIFIERS	14	15	12	11	17	15
0 902 02-28 DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM DON'T REMEMBER WHICH PULSE MODULATION SYSTEM STAGES	5	5	5	3	8	11
0 903 02-29 DO YOU USE OR REFER TO PULSE RECURRENCE FREQUENCY (PRF)	25	25	28	20	31	37
0 904 02-30 DO YOU USE OR REFER TO PULSE RECURRENCE TIME (PRT)	24	23	28	18	29	37
0 905 02-31 DO YOU USE OR REFER TO PULSE WIDTH (PW)	27	27	28	23	33	37
0 906 02-32 DO YOU USE OR REFER TO PULSE SHAPE	25	25	28	20	32	37
0 907 02-33 DO YOU USE OR REFER TO PEAK POWER	20	20	22	18	23	30
0 908 02-34 DO YOU USE OR REFER TO AVERAGE POWER	20	20	22	18	23	30
0 909 02-35 DO YOU CALCULATE PULSE RECURRENCE TIME (PRT) OR PULSE RECURRENCE FREQUENCY (PRF)	18	16	27	9	24	37
0 910 02-36 DO YOU MEASURE PULSE RECURRENCE TIME (PRT) OR PULSE RECURRENCE FREQUENCY (PRF)	21	20	27	13	30	37
0 911 02-37 DO YOU USE FORMULAS TO CALCULATE AVERAGE POWER OR PEAK POWER OF PULSE MODULATION TRANSMIT SYSTEMS	9	9	13	9	8	15
0 912 02-38 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH PULSE MODULATION TRANSMITTER SCHEMATIC DIAGRAMS	22	21	25	17	26	33
0 913 02-39 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH PULSE MODULATION RECEIVER SCHEMATIC DIAGRAMS	23	22	25	17	28	37
0 914 03-01 DO YOU WORK WITH ANTENNAS IN YOUR PRESENT JOB	77	76	82	68	89	91
0 915 03-02 DO YOU INSPECT ANTENNAS	76	75	80	66	88	89
0 916 03-03 DO YOU CLEAN ANTENNAS	68	65	68	63	73	85
0 917 03-04 DO YOU PHYSICALLY ALIGN ANTENNAS	22	23	20	24	22	15
0 918 03-05 DO YOU ELECTRICALLY ALIGN ANTENNAS	10	11	3	11	11	4
0 919 03-06 DO YOU TROUBLESHOOT TO ANTENNAS	67	66	75	60	77	89
0 920 03-07 DO YOU TROUBLESHOOT TO ANTENNA COMPONENTS	17	17	15	18	15	26
0 921 03-08 DO YOU REMOVE OR INSTALL ANTENNAS	76	75	82	68	90	89
0 922 03-09 DO YOU REMOVE OR REPLACE COMPONENTS OF ANTENNAS	14	15	8	14	14	15
0 923 03-10 DO YOU USE OR REFER TO TECHNICAL DATA CONTAINING REPRESENTATIONS OF E OR ELECTRIC FIELD LINES	8	8	7	7	8	15
0 924 03-11 DO YOU USE OR REFER TO TECHNICAL DATA CONTAINING REPRESENTATIONS OF H OR MAGNETIC FIELD LINES	8	9	5	8	9	11

ANTENNAS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

UY-TSK

	SPC	SPC	SPC	SPC	SPC	SPC	SPC
	001	002	003	004	005	006	
0 929 03-16 DO YOU WORK WITH HERTZ ANTENNAS	16	17	8	18	17	7	
0 930 03-17 DO YOU WORK WITH HARCONI ANTENNAS	11	12	5	13	9	0	
0 931 03-18 DO YOU WORK WITH BROADSIDE ARRAYS	16	18	7	22	11	0	
0 932 03-19 DO YOU WORK WITH END-FIRE ARRAYS	13	14	10	18	8	7	
0 933 03-20 DO YOU WORK WITH CARDIOID ARRAYS	11	11	12	12	9	7	
0 934 03-21 DO YOU WORK WITH COLLINER ARRAYS	14	14	8	17	11	4	
0 935 03-22 DO YOU USE OR REFER TO THE TERM ELECTROMAGNETIC INDUCTION FIELDS WHEN WORKING WITH ANTENNAS	7	7	5	6	9	11	
0 936 03-23 DO YOU MEASURE ELECTROMAGNETIC INDUCTION FIELDS OF ANTENNAS	5	5	3	3	7	7	
0 937 03-24 DO YOU USE OR REFER TO THE TERM ELECTROMAGNETIC RADIATION FIELDS WHEN WORKING WITH ANTENNAS	9	10	3	8	11	7	
0 938 03-25 DO YOU MEASURE ELECTROMAGNETIC RADIATION FIELDS OF ANTENNAS	7	7	5	6	9	11	
0 939 03-26 DO YOU USE OR REFER TO THE TIME PHASE OF ELECTRIC (E) AND MAGNETIC (H) COMPONENTS IN ANTENNA RADIATION	3	3	0	2	3	0	
0 940 03-27 DO YOU USE OR REFER TO THE TIME PHASE OF ELECTRIC (E) AND MAGNETIC (H) COMPONENTS IN ANTENNA INDUCTION FIELD	3	3	0	3	3	0	
0 941 03-28 ARE ANY OF THE ANTENNAS YOU WORK ON LINEARLY POLARIZED	23	24	17	27	21	11	
0 942 03-29 ARE ANY OF THE ANTENNAS YOU WORK ON CIRCULARLY POLARIZED	41	41	42	32	53	52	
0 943 03-30 DO YOU MEASURE OR DETERMINE THE POLARITY OF ANTENNAS YOU WORK ON	8	9	2	9	9	0	
0 944 03-31 DO YOU CONSTRUCT, OR MAKE THE CALCULATIONS NECESSARY TO CONSTRUCT, ANTENNAS OF CORRECT LENGTH FOR ELEMENTS	3	4	0	3	4	0	
0 945 03-32 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS	10	9	15	12	5	19	
0 946 03-33 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS SERVING AS DIRECTORS	9	7	17	9	4	22	
0 947 03-34 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS SERVING AS REFLECTORS	8	7	10	10	3	11	
0 948 03-35 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN DON'T REMEMBER WHAT KIND OF ELEMENTS	34	34	35	28	41	33	
0 949 03-36 DO YOU WORK ON UNIDIRECTIONAL ANTENNAS	44	44	47	41	46	48	
0 950 03-37 DO YOU WORK ON BIDIRECTIONAL ANTENNAS	34	34	30	35	35	30	
0 951 03-38 DO YOU WORK ON DON'T REMEMBER THE DIRECTIONALITY	18	20	10	16	23	11	
0 952 03-39 DO YOU WORK WITH ROTAR ANTENNA ARRAYS	7	8	0	13	3	0	
P 953 PI-01 IN YOUR PRESENT JOB DO YOU WORK WITH TRANSMISSION LINES (TRANSMISSION LINES ARE DEFINED TO INCLUDE LEADS CURRENTS IN TRANSMISSION LINES)	54	56	40	56	60	44	TRANSMISSION LINES
P 954 PI-02 DO YOU REFER TO OR USE COPPER LOSS OR I2R LOSS IN TRANSMISSION LINES	7	7	5	6	7	7	
P 955 PI-03 DO YOU REFER TO OR USE SKIN EFFECTS OF HIGH FREQUENCY CURRENTS IN TRANSMISSION LINES	9	9	10	8	10	19	

PCT MEMBERS RESPONDING 'YES' BY SELECTED SPS

TASK GROUP SUMMARY PERCENT MEMBERS PERFORMING

DY-TSK

	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006
P 956 P1-04 DO YOU REFER TO OR USE RADIATION LOSS IN TRANSMISSION LINES	18	19	10	21	17	19
P 957 P1-05 DO YOU USE OR REFER TO DIELECTRIC LOSS IN TRANSMISSION LINES	12	12	13	13	9	19
P 958 P1-06 DO YOU USE OR REFER TO LEAKAGE LOSSES IN TRANSMISSION LINES	15	15	13	16	15	19
P 959 P1-07 DO YOU WORK WITH TWISTED PAIR TRANSMISSION LINES	9	10	3	10	7	4
P 960 P1-08 DO YOU WORK WITH TWIN LEAD TRANSMISSION LINES	9	9	5	10	7	4
P 961 P1-09 DO YOU WORK WITH OPEN TWO-WIRE TRANSMISSION LINES	7	7	5	7	5	0
P 962 P1-10 DO YOU WORK WITH FLEXIBLE COAXIAL CABLE TRANSMISSION LINES	52	54	40	54	57	44
P 963 P1-11 DO YOU WORK WITH RIGID COAXIAL CABLE TRANSMISSION LINES	35	36	28	38	37	30
P 964 P1-12 DO YOU TROUBLESHOOT TRANSMISSION LINES	44	45	38	43	51	41
P 965 P1-13 DO YOU ANALYZE VOLTAGE OR CURRENT WAVEFORMS IN TRANSMISSION LINES TO DETERMINE THE TYPE OF TERMINATION	8	7	12	5	10	4
P 966 P1-14 DO YOU SELECT APPROPRIATE TRANSMISSION LINES TERMINATIONS TO ACHIEVE DESIRED WAVEFORMS	9	8	10	9	7	11
P 967 P1-15 DO YOU USE OR REFER TO SCHEMATIC SYMBOLS FOR LINE TERMINATIONS IN TERMS OF CIRCUIT TERMINATIONS	16	16	15	14	19	15
P 968 P1-16 DO YOU MEASURE STANDING WAVE RATIOS (SWR) OF TRANSMISSION LINES	16	17	8	18	15	4
P 969 P1-17 DO YOU CALCULATE STANDING WAVE RATIOS (SWR) OF TRANSMISSION LINES	11	12	5	12	12	4
P 970 P1-18 DO YOU PERFORM THE CALCULATIONS NECESSARY TO DETERMINE THE IMPEDANCE AND LENGTH OF QUARTER - WAVELENGTH	6	6	2	6	6	4
P 971 P1-19 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING MATCHING TRANSFORMERS	9	10	3	9	9	4
P 972 P1-20 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING DELTA MATCHING	5	6	2	5	5	4
P 973 P1-21 DO YOU SELECT THE TYPE OF TRANSMISSION LINE NEEDED FOR PARTICULAR JOBS WITHOUT REFERRING TO TECHNICAL DATA	6	6	5	5	7	11
P 974 P1-22 DO YOU USE OR REFER TO THE TERM CHARACTERISTIC IMPEDANCE (Z0) OF TRANSMISSION LINES	9	9	10	7	10	11
P 975 P1-23 DO YOU CALCULATE THE CHARACTERISTIC IMPEDANCE (Z0) OF TRANSMISSION LINES	3	3	2	2	3	0
P 976 P1-24 DO YOU USE OR REFER TO THE TERM CUTOFF FREQUENCY OF TRANSMISSION LINES	6	6	5	5	9	7
P 977 P1-25 DO YOU USE OR REFER TO THE TERM VELOCITY FACTOR (K) OF TRANSMISSION LINES	2	3	0	2	3	0
P 978 P1-26 DO YOU COMPUTE THE ELECTRICAL LENGTH OF TRANSMISSION LINES FOR PARTICULAR FREQUENCIES	5	5	0	5	4	0
P 979 P1-27 DO YOU CONSTRUCT TRANSMISSION LINES OF PARTICULAR ELECTRICAL LENGTH FOR GIVEN FREQUENCIES	5	5	0	3	6	0
P 980 P1-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT AS THE FREQUENCY INCREASES AND THE PHYSICAL LENGTH OF	7	8	2	7	7	0

PAT MEMBERS RESPONDING TEST BY SELECTED QPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK									
	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
	001	002	003	004	005	006			
P 981 P1-29 DO YOU WORK WITH NONRESONANT (FLAT) TRANSMISSION LINES	9	9	8	9	9	7			
P 982 P1-30 DO YOU WORK WITH RESONANT TRANSMISSION LINES	13	14	5	13	14	7			
P 983 P1-31 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING STUB MATCHING	9	9	7	7	11	7			
P 984 P2-01 DO YOU WORK WITH WAVEGUIDES OR CAVITY RESONATORS IN YOUR PRESENT JOB	44	45	33	53	40	37			

WAVEGUIDES AND CAVITY RESONATORS

P 985 P2-02 DO YOU INSPECT WAVEGUIDES OR CAVITY RESONATORS	42	43	33	50	38	41			
P 986 P2-03 DO YOU CLEAN WAVEGUIDES OR CAVITY RESONATORS	33	34	25	41	31	37			
P 987 P2-04 DO YOU BEND WAVEGUIDES OR CAVITY RESONATORS	20	21	15	26	15	19			
P 988 P2-05 DO YOU TWIST WAVEGUIDES OR CAVITY RESONATORS	17	17	12	23	11	15			
P 989 P2-06 DO YOU PRESSURIZE WAVEGUIDES OR CAVITY RESONATORS	14	16	3	27	6	0			
P 990 P2-07 DO YOU PURGE WAVEGUIDES OR CAVITY RESONATORS	8	9	3	13	5	0			
P 991 P2-08 DO YOU TROUBLESHOOT WAVEGUIDES OR CAVITY RESONATORS	28	30	20	34	27	22			
P 992 P2-09 DO YOU REMOVE OR INSTALL COMPLETE WAVEGUIDES	39	40	33	44	36	37			
P 993 P2-10 DO YOU REMOVE OR INSTALL WAVEGUIDE SECTIONS	34	35	27	42	30	30			
P 994 P2-11 DO YOU REMOVE OR INSTALL DUMMY LOADS	35	35	33	35	37	37			
P 995 P2-12 DO YOU REMOVE OR INSTALL E BENDS	17	17	10	24	12	11			
P 996 P2-13 DO YOU REMOVE OR INSTALL H BENDS	16	17	10	23	13	11			
P 997 P2-14 DO YOU REMOVE OR INSTALL OTHER BENDS	18	19	8	24	15	11			
P 998 P2-15 DO YOU REMOVE OR INSTALL CHOKE JOINTS	7	8	3	8	7	0			
P 999 P2-16 DO YOU REMOVE OR INSTALL ROTATING JOINTS	6	7	3	8	6	0			
P1000 P2-17 DO YOU REMOVE OR INSTALL DIRECTIONAL COUPLERS	34	35	32	36	37	33			
P1001 P2-18 DO YOU REMOVE OR INSTALL BIDIRECTIONAL COUPLERS	18	19	13	22	16	11			
P1002 P2-19 DO YOU USE OR REFER TO "A" WALL OF WAVEGUIDES	4	4	2	4	4	4			
P1003 P2-20 DO YOU USE OR REFER TO "B" WALL OF WAVEGUIDES	3	3	0	3	4	0			
P1004 P2-21 DO YOU USE OR REFER TO CUTOFF FREQUENCY OF WAVEGUIDES	7	7	8	7	8	11			
P1005 P2-22 DO YOU USE OR REFER TO FREQUENCY-DETERMINING WALL OF WAVEGUIDES	4	5	2	5	5	4			
P1006 P2-23 DO YOU USE OR REFER TO POWER-DETERMINING WALL OF WAVEGUIDES	5	5	5	5	5	7			
P1007 P2-24 DO YOU USE OR REFER TO ELECTRIC FIELD BOUNDARY CONDITIONS	3	4	0	3	4	0			
P1008 P2-25 DO YOU USE OR REFER TO MAGNETIC FIELD BOUNDARY CONDITIONS	3	4	0	4	4	0			
P1009 P2-26 DO YOU USE OR REFER TO DUPLEXER FIELD BOUNDARY CONDITIONS	3	3	0	2	4	0			
P1010 P2-27 DO YOU USE OR REFER TO THE GENERAL RULE THAT MOST WAVEGUIDES ARE MADE WITH A "B" WALL SIZE OF .7 WAVELENGTHS	2	2	0	1	4	0			
P1011 P2-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT MOST "A" WALLS RANGE FROM .2 TO .5 WAVELENGTHS IN SIZE, WITH .35	2	2	0	1	3	0			
P1012 P2-29 ARE YOU CONCERNED WITH THE MATERIAL (SUCH AS BRASS) WHICH WAVEGUIDES ARE MADE OF	5	6	2	5	6	4			
P1013 P2-30 DO YOU COMPUTE THE LENGTH OF A WAVEGUIDE FOR SPECIFIC INSTALLATION	3	3	3	3	3	0			

PCT MEMBERS RESPONDING QUESTIONS BY SELECTED WORDS

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TASK GROUP SUMMARY PERCENT MEMBERS PERFORMING

SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
001	002	003	004	005	006	007	008
DY-TSK							
P1014	P2-31	DO YOU USE THE RIGHT HAND RULE TO DETERMINE THE DIRECTION OF PROPAGATION, DIRECTION OF "E" FIELD, OR	3	4	0	3	0
P1015	P2-32	DO YOU USE OR REFER TO THE TIME PHASE OF PEAK "E" OR "H" LINES IN WAVEGUIDES	3	3	0	2	4
P1016	P2-33	DO YOU MEASURE THE TIME PHASE OF "E" OR "H" LINES IN WAVEGUIDES	2	3	0	1	4
P1017	P2-34	DO YOU USE OR REFER TO THE SPACE QUADRATURE OF "E" OR "H" LINES IN WAVEGUIDES	2	2	0	1	3
P1018	P2-35	ARE HIGH POWER PROBES USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	8	7	13	7	6
P1019	P2-36	ARE LOW POWER PROBES USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	10	8	17	7	10
P1020	P2-37	ARE LOOPS USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	9	9	8	9	7
P1021	P2-38	ARE APERTURES (WINDOWS OR IRISES) USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	13	13	12	11	13
P1022	P2-39	ARE DON'T REMEMBER THE KIND OF ENERGY COUPLING USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	15	16	12	16	17
P1023	P2-40	DO YOU DETERMINE WHERE PROBES SHOULD BE MOUNTED IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO WAVEGUIDES OR CAVITY RESONATORS	2	2	0	1	3
P1024	P2-41	DO YOU DETERMINE THE POSITIONING OF LOOPS IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO WAVEGUIDES OR CAVITY RESONATORS	1	2	0	1	2
P1025	P2-42	DO YOU DETERMINE THE POSITIONING OR SIZE OF APERTURES IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO WAVEGUIDES OR CAVITY RESONATORS	2	2	0	1	3
P1026	P2-43	ARE CHOKE JOINTS USED IN WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	5	5	3	2	7
P1027	P2-44	ARE ROTATING JOINTS USED IN WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	4	5	0	5	4
P1028	P2-45	ARE DON'T REMEMBER THE KIND OF JOINTS USED IN WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH	16	16	13	20	11
P1029	P2-46	DO YOU TUNE CAVITY RESONATORS USING CAPACITIVE TUNING	5	6	0	7	6
P1030	P2-47	DO YOU TUNE CAVITY RESONATORS USING INDUCTIVE TUNING	6	6	3	7	5
P1031	P2-48	DO YOU TUNE CAVITY RESONATORS USING VOLUME TUNING	6	7	3	6	7
P1032	P2-49	DO YOU TUNE CAVITY RESONATORS USING DON'T REMEMBER THE METHOD OF TUNING	10	10	12	10	9
P1033	P2-50	DO YOU MEASURE THE FREQUENCY OF SIGNALS IN CAVITY RESONATORS	10	10	12	12	6
P1034	P3-01	IN YOUR PRESENT JOB DO YOU WORK WITH KLYSTRONS, TRAVELING WAVE TUBES (TWT), PARAMETRIC AMPLIFIERS, OR	44	45	37	43	51
P1035	P3-02	DO YOU USE OR REFER TO INTERELECTRODE CAPACITANCE	11	12	7	14	10
P1036	P3-03	DO YOU USE OR REFER TO ELECTRON TRANSIT TIME	8	9	2	10	10
P1037	P3-04	DO YOU USE OR REFER TO LEAD INDUCTANCE	8	8	8	9	8

MICROWAVE AMPLIFIERS AND OSCILLATORS

PCT MEMBERS RESPONDING TEST AT SELECTED GPS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

0Y-TSK									
	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
	001	002	003	004	005	006	007	008	009
P1038 P3-05 DO YOU USE OR REFER TO RF LOSSES IN EXTERNAL CIRCUITRY	20	19	25	18	23	22			
P1039 P3-06 DO YOU USE OR REFER TO PRINCIPLE OF ELECTRON VELOCITY MODULATION	13	13	12	13	15	11			
P1040 P3-07 DO YOU USE OR REFER TO ELECTRON BUNCHING	15	16	12	16	18	11			
P1041 P3-08 DO YOU WORK WITH TWO-CAVITY KLYSTRONS	4	4	0	5	4	0			
P1042 P3-09 DO YOU WORK WITH THREE-CAVITY KLYSTRONS	2	3	0	3	3	0			
P1043 P3-10 DO YOU WORK WITH REFLEX KLYSTRONS	5	6	0	9	4	0			
P1044 P3-11 DO YOU WORK WITH TRAVELING-WAVE TUBES (TWT)	36	35	37	36	41	41			
P1045 P3-12 DO YOU WORK WITH NONDEGENERATIVE PARAMETRIC AMPLIFIERS	4	4	3	2	7	7			
P1046 P3-13 DO YOU WORK WITH UP-CONVERTER PARAMETRIC AMPLIFIERS	4	5	0	4	6	0			
P1047 P3-14 DO YOU WORK WITH MAGNETRONS	18	20	3	18	25	4			
P1048 P3-15 DO YOU INSPECT KLYSTRONS OR TWT	32	31	35	28	39	41			
P1049 P3-16 DO YOU CLEAN KLYSTRONS OR TWT	24	24	23	24	29	30			
P1050 P3-17 DO YOU TUNE KLYSTRONS OR TWT ELECTRICALLY	22	24	10	25	26	7			
P1051 P3-18 DO YOU TUNE KLYSTRONS OR TWT MECHANICALLY	10	11	3	11	13	4			
P1052 P3-19 DO YOU PERFORM OPERATIONAL CHECKS OF KLYSTRONS OR TWT	33	32	37	31	40	41			
P1053 P3-20 DO YOU TROUBLESHOOT KLYSTRONS OR TWT	28	27	32	26	33	37			
P1054 P3-21 DO YOU REMOVE OR REPLACE COMPLETE KLYSTRON OR TWT	34	34	35	34	41	37			
P1055 P3-22 DO YOU REMOVE OR REPLACE KLYSTRON OR TWT COMPONENTS	5	6	2	6	5	0			
P1056 P3-23 DO YOU INSPECT PARAMETRIC AMPLIFIERS	5	5	0	4	7	0			
P1057 P3-24 DO YOU CLEAN PARAMETRIC AMPLIFIERS	4	5	0	4	6	0			
P1058 P3-25 DO YOU ADJUST PARAMETRIC AMPLIFIERS	5	6	0	5	7	0			
P1059 P3-26 DO YOU TUNE PARAMETRIC AMPLIFIERS	4	4	0	3	5	0			
P1060 P3-27 DO YOU PERFORM OPERATIONAL CHECKS OF PARAMETRIC AMPLIFIERS	5	6	0	5	7	0			
P1061 P3-28 DO YOU TROUBLESHOOT PARAMETRIC AMPLIFIERS	4	5	0	3	7	0			
P1062 P3-29 DO YOU REMOVE OR REPLACE COMPLETE PARAMETRIC AMPLIFIER	4	4	0	3	7	0			
P1063 P3-30 DO YOU REMOVE OR REPLACE PARAMETRIC AMPLIFIER COMPONENTS	3	3	0	1	5	0			
P1064 P3-31 DO YOU INSPECT MAGNETRONS	18	20	2	16	25	4			
P1065 P3-32 DO YOU CLEAN MAGNETRONS	15	17	2	16	19	4			
P1066 P3-33 DO YOU ADJUST MAGNETRONS	16	18	0	15	21	0			
P1067 P3-34 DO YOU TUNE MAGNETRONS	17	19	0	15	23	0			
P1068 P3-35 DO YOU PERFORM OPERATIONAL CHECKS OF MAGNETRONS	17	19	0	15	23	0			
P1069 P3-36 DO YOU TROUBLESHOOT MAGNETRONS	15	18	0	14	21	0			
P1070 P3-37 DO YOU REMOVE OR REPLACE COMPLETE MAGNETRON	17	20	0	15	25	0			
P1071 P3-38 DO YOU REMOVE OR REPLACE MAGNETRON COMPONENTS	5	5	0	4	8	0			
P1072 P3-39 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS COLLECTOR PLATES	3	3	0	2	5	0			
P1073 P3-40 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATCHER CAVITIES	3	3	0	2	5	0			
P1074 P3-41 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATCHER GRIDS	3	3	0	2	5	0			

PCI MEMBERS RESPONDING TO SELECTED TASKS

TASK GROUP SUMMARY PERCENT MEMBERS PERFORMING

	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006
P1075 P3-42 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS FEEDBACK LOOPS	2	3	0	1	5	0
P1076 P3-43 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS DRIFT SPACES	1	2	0	1	3	0
P1077 P3-44 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS BUNCHER GRIDS	2	3	0	1	5	0
P1078 P3-45 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS BUNCHER CAVITIES	3	3	0	2	5	0
P1079 P3-46 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CONTROL GRIDS	3	3	0	1	5	0
P1080 P3-47 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATHODES	3	4	0	2	6	0
P1081 P3-48 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON REFLECTOR (REFLECTOR) PLATES	4	5	0	6	3	0
P1082 P3-49 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON GRIDS	4	5	0	6	4	0
P1083 P3-50 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON GRID CAVITY GAPS	4	4	0	6	3	0
P1084 P3-51 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON RESONANT CAVITIES	4	5	0	6	3	0
P1085 P3-52 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON MAGNETIC COUPLING LOOPS	3	4	0	4	3	0
P1086 P3-53 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON FILAMENTS	4	5	0	6	4	0
P1087 P3-54 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON CATHODES	4	5	0	6	4	0
P1088 P3-55 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON OUTPUT LEADS	4	4	0	5	4	0
P1089 P3-56 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES FILAMENTS	27	25	35	23	32	37
P1090 P3-57 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES CATHODES	25	24	30	21	32	26
P1091 P3-58 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES MODULATOR GRIDS	18	18	18	16	24	19
P1092 P3-59 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES ANODES	26	25	30	24	31	26
P1093 P3-60 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES HELICES	26	25	28	24	31	26
P1094 P3-61 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES COLLECTORS	23	22	27	19	29	26
P1095 P3-62 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES MAGNETS	17	17	22	18	17	22
P1096 P3-63 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES ATTENUATORS	22	21	25	21	24	30
P1097 P3-64 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER FERRITE CIRCULATORS	1	1	0	1	2	0
P1098 P3-65 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER SIGNAL CAVITIES	2	2	0	1	3	0

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK

	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006
P1099 P3-66 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER IDLER CAVITIES	1	1	0	1	2	0
P1100 P3-67 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER VARACTOR DIODES	3	3	0	2	5	0
P1101 P3-68 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER FERRITE ISOLATORS	2	2	0	1	3	0
P1102 P3-69 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER REVERSE-BIAS BATTERIES	2	2	0	1	3	0
P1103 P3-70 DO YOU PERFORM TASKS ON ANODES	7	8	0	7	9	0
P1104 P3-71 DO YOU PERFORM TASKS ON ANODE COOLING PINS	4	4	0	3	5	0
P1105 P3-72 DO YOU PERFORM TASKS ON COUPLING LOOPS	5	4	0	3	7	0
P1106 P3-73 DO YOU PERFORM TASKS ON HEATER LEADS	6	7	0	4	9	0
P1107 P3-74 DO YOU PERFORM TASKS ON RESONANT CAVITIES	5	6	0	5	7	0
P1108 P3-75 DO YOU PERFORM TASKS ON CATHODES	8	9	0	8	11	0
P1109 P3-76 DO YOU PERFORM TASKS ON MAGNETS	6	7	0	6	8	0
Q1110 Q1-01 DO YOU USE OR REFER TO STORAGE REGISTERS	23	25	15	18	31	19
Q1111 Q1-02 DO YOU USE OR REFER TO SHIFT REGISTERS	24	25	17	18	33	19
Q1112 Q1-03 DO YOU USE OR REFER TO LOGIC SYMBOLS OF SHIFT REGISTERS	22	24	13	16	33	15
Q1113 Q1-04 DO YOU USE OR REFER TO LOGIC SYMBOLS OF STORAGE REGISTERS	22	23	15	15	33	15
Q1114 Q1-05 DO YOU TRACE THE DATA FLOW THROUGH LOGIC DIAGRAMS OF SHIFT REGISTERS	18	19	12	14	23	11
Q1115 Q1-06 DO YOU TRACE THE DATA FLOW THROUGH LOGIC DIAGRAMS OF OTHER TYPE OF REGISTERS	18	18	17	14	22	19
Q1116 Q1-07 DO YOU DETERMINE THE STATE OF EACH FLIP-FLOP OF A SHIFT REGISTER AFTER A SPECIFIED NUMBER OF SHIFT PULSES	14	15	7	12	16	4
Q1117 Q2-01 DO YOU WORK WITH DIGITAL COUNTERS, REGISTERS, OR STORAGE DEVICES IN YOUR PRESENT JOB	27	28	25	21	37	33
Q1118 Q2-02 DO YOU USE OR REFER TO DELAY LINES	14	14	13	8	21	15
Q1119 Q2-03 DO YOU USE OR REFER TO MAGNETIC CORES	9	9	5	5	11	4
Q1120 Q2-04 DO YOU USE OR REFER TO MAGNETIC DRUMS	3	4	0	1	6	0
Q1121 Q2-05 DO YOU USE OR REFER TO MAGNETIC TAPES	12	13	5	14	10	0
Q1122 Q2-06 DO YOU USE OR REFER TO ACCESS TIME OR SPEED OR MEMORY SYSTEMS	8	9	3	3	16	4
Q1123 Q2-07 DO YOU USE OR REFER TO WORD CAPACITY OF MEMORY SYSTEMS	13	14	8	9	18	7
Q1124 Q2-08 DO YOU USE OR REFER TO VOLATILITY OF MEMORY SYSTEMS	6	6	5	3	9	0
Q1125 Q2-09 DO YOU USE OR REFER TO LOGIC SYMBOL OF DELAY LINES	13	13	12	9	17	11
Q1126 Q3-01 IN YOUR PRESENT JOB, DO YOU WORK WITH DIGITAL-TO-ANALOG (D/A) CONVERTERS, ANALOG-TO-DIGITAL (A/D) DIGITAL-TO-ANALOG (D/A) CONVERTERS FOR GIVEN INPUT	18	18	22	12	27	22
Q1127 Q3-02 DO YOU COMPUTE OUTPUT VOLTAGES FOR ELECTROMECHANICAL DIGITAL-TO-ANALOG (D/A) CONVERTERS FOR GIVEN INPUT	6	6	7	4	7	4
Q1128 Q3-03 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE COUNT IN ELECTROMECHANICAL DIGITAL-TO-ANALOG (D/A)	3	3	3	2	6	0

DIGITAL TO ANALOG CONVERTERS

STORAGE DEVICES

REGISTERS

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DY-TSK		SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
		001	002	003	004	005	006	007	008
Q1129	Q3-04 DO YOU COMPUTE ANALOG VOLTAGES FOR GIVEN BINARY COUNTS IN ELECTRONIC DIGITAL-TO-ANALOG (D/A) CONVERTERS	7	7	5	6	9	4		
Q1130	Q3-05 DO YOU PERFORM SAMPLE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	7	7	3	6	9	4		
Q1131	Q3-06 DO YOU PERFORM HOLD FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	6	7	3	6	9	4		
Q1132	Q3-07 DO YOU PERFORM COMPARE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	7	8	5	6	9	7		
Q1133	Q3-08 DO YOU PERFORM DIGITIZE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS	6	7	5	5	8	7		
Q1134	Q3-09 DO YOU PERFORM DON'T REMEMBER WHICH FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER	6	6	10	5	7	11		
Q1135	Q3-10 DO YOU USE OR REFER TO SAMPLE FUNCTION OF A/D CONVERTERS	8	9	3	6	12	4		
Q1136	Q3-11 DO YOU USE OR REFER TO HOLD FUNCTION OF A/D CONVERTERS	8	9	2	6	13	0		
Q1137	Q3-12 DO YOU USE OR REFER TO COMPARE FUNCTION OF A/D CONVERTERS	8	9	3	6	12	4		
Q1138	Q3-13 DO YOU USE OR REFER TO DIGITAL FUNCTION OF A/D CONVERTERS	9	9	7	7	12	7		
Q1139	Q3-14 DO YOU PERFORM ANY TASKS ON MECHANICAL ANALOG-TO-DIGITAL (A/D) CONVERTERS	4	4	2	2	5	0		
R1140	R1-01 DO YOU WORK WITH PHANTASTRON CIRCUITRY IN YOUR PRESENT JOB	2	2	2	1	3	0		PHANTASTRONS
R1141	R2-01 IN YOUR PRESENT JOB DO YOU WORK WITH SCHMITT TRIGGER CIRCUITS	26	27	15	24	29	15		SCHMITT TRIGGERS
R1142	R2-02 DO YOU TRACE DATA FLOW THROUGH SCHMITT TRIGGER SCHEMATIC DIAGRAMS	22	24	12	22	23	11		
R1143	R2-03 DO YOU USE OR REFER TO SCHMITT TRIGGER LOGIC SYMBOLS	19	19	15	16	22	19		
R1144	R3-01 IN YOUR PRESENT JOB DO YOU FABRICATE MULTICONDUCTOR CABLES	61	61	58	56	69	59		CABLE FABRICATION
R1145	R3-02 DO YOU FABRICATE COAXIAL CABLES	68	68	65	60	81	59		
S1146	S1-01 IN YOUR PRESENT JOB DO YOU PERFORM ANY TASKS ON VISUAL READOUT SYSTEMS	36	38	28	35	43	41		
S1147	S1-02 DO YOU PERFORM ANY TASKS ON NIXIE LIGHTS OR NIXIE LIGHT DECODER SYSTEMS	14	15	10	14	13	7		INPUT/OUTPUT DEVICES
S1148	S1-03 DO YOU ANALYZE NIXIE LIGHT DECODER SYSTEMS USING BOOLEAN ALGEBRA	7	7	5	6	6	0		
S1149	S2-01 DO YOU WORK WITH PHOTO TUBES IN YOUR PRESENT JOB	5	5	7	2	5	4		PHOTO SENSITIVE DEVICES
S1150	S3-01 IN YOUR PRESENT JOB DO YOU WORK WITH CHOPPER CIRCUITS	14	15	5	14	15	0		SYNCHRONOUS VIBRATIONS (CHOPPER CIRCUITS)
S1151	S3-02 DO YOU MEASURE EXCITATION FREQUENCIES	6	6	5	5	7	0		
S1152	S3-03 DO YOU MEASURE VOLTAGE-CURRENT PHASE RELATIONSHIPS	5	5	5	5	6	0		
S1153	S3-04 DO YOU USE OR REFER TO EXCITATION FREQUENCIES	5	5	5	5	5	0		
S1154	S3-05 DO YOU USE OR REFER TO VOLTAGE-CURRENT PHASE RELATIONSHIPS	5	5	5	5	6	0		
S1155	S3-06 DO YOU USE SERVOS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	7	7	5	9	4	0		

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

DT=YSK

	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006
51156 53-07 DO YOU USE DETECTORS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	9	10	5	10	9	0
51157 53-08 DO YOU USE ERROR SIGNAL DEVICES IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	10	11	5	9	10	0
51158 53-09 DO YOU USE COMPARISON CIRCUITS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION	11	12	5	12	11	0
11159 11-01 DOES YOUR PRESENT JOB INVOLVE ANY TASKS DEALING WITH INFRARED SYSTEMS	4	5	0	8	1	0
11160 11-02 DO YOU INSPECT INFRARED SYSTEMS	4	4	0	7	1	0
11161 11-03 DO YOU CLEAN INFRARED SYSTEMS	3	4	0	7	0	0
11162 11-04 DO YOU ADJUST OR CALIBRATE INFRARED SYSTEMS	3	4	0	6	1	0
11163 11-05 DO YOU OPERATE INFRARED SYSTEMS	3	4	0	7	1	0
11164 11-06 DO YOU TROUBLESHOOT WIRE CONNECTIONS OF INFRARED SYSTEMS	4	4	0	7	1	0
11165 11-07 DO YOU TROUBLESHOOT MAJOR ASSEMBLIES OF INFRARED SYSTEMS	4	4	0	7	1	0
11166 11-08 DO YOU TROUBLESHOOT DOWN TO INFRARED SYSTEM COMPONENT PARTS	3	4	0	7	1	0
11167 11-09 DO YOU REMOVE OR REPLACE MAJOR ASSEMBLIES OF INFRARED SYSTEMS	4	4	0	7	1	0
11168 11-10 DO YOU REMOVE OR REPLACE INFRARED SYSTEM COMPONENT PARTS	3	4	0	7	0	0
11169 11-11 DO YOU USE OR REFER TO FAR REGION	1	2	0	2	1	0
11170 11-12 DO YOU USE OR REFER TO INTERMEDIATE REGION	1	2	0	3	0	0
11171 11-13 DO YOU USE OR REFER TO NEAR REGION	1	1	0	2	0	0
11172 11-14 DO YOU USE OR REFER TO MICRON	1	2	0	2	1	0
11173 11-15 DO YOU USE OR REFER TO GRAY BODIES	0	1	0	1	0	0
11174 11-16 DO YOU USE OR REFER TO BLACK BODIES	2	2	0	4	0	0
11175 11-17 DO YOU USE OR REFER TO ABSORPTION	1	1	0	2	0	0
11176 11-18 DO YOU USE OR REFER TO SCATTERING	0	0	0	0	0	0
11177 11-19 DO YOU USE OR REFER TO ABSOLUTE ZERO	1	1	0	1	0	0
11178 11-20 DO YOU PERFORM TASKS ON BLITZ	0	0	0	0	0	0
11179 11-21 DO YOU PERFORM TASKS ON TARGET BUTTONS	1	2	0	2	1	0
11180 11-22 DO YOU PERFORM TASKS ON ERECTOR LENSES	0	0	0	0	0	0
11181 11-23 DO YOU PERFORM TASKS ON OCULAR LENSES	0	0	0	0	0	0
11182 11-24 DO YOU PERFORM TASKS ON CORRECTION LENSES	1	1	0	1	1	0
11183 11-25 DO YOU PERFORM TASKS ON FILTERS	2	2	0	3	1	0
11184 11-26 DO YOU PERFORM TASKS ON SPHERICAL MIRRORS	1	1	0	1	0	0
11185 11-27 DO YOU PERFORM TASKS ON PLANE MIRRORS	1	1	0	1	0	0
11186 11-28 DOES YOUR PRESENT JOB INVOLVE ANY TASKS DEALING WITH LASERS	0	0	0	0	0	0
11187 11-29 DO YOU INSPECT LASER SYSTEMS	0	0	0	0	0	0
11188 11-30 DO YOU CLEAN LASER SYSTEMS	0	0	0	0	0	0
11189 11-31 DO YOU OPERATE LASER SYSTEMS	0	0	0	0	0	0
11190 11-32 DO YOU OPERATE LASER SYSTEMS	0	0	0	0	0	0
11191 11-33 DO YOU TROUBLESHOOT WIRE CONNECTIONS OF LASER SYSTEMS	0	0	0	0	0	0

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

	DY-TSK	SPC 001	SPC 002	SPC 003	SPC 004	SPC 005	SPC 006
T1192 T2-07 DO YOU TROUBLESHOOT MAJOR ASSEMBLIES OF LASER SYSTEMS		0	0	0	0	0	0
T1193 T2-08 DO YOU TROUBLESHOOT TO COMPONENT PARTS OF LASER SYSTEMS		0	0	0	0	0	0
T1194 T2-09 DO YOU REMOVE OR REPLACE MAJOR ASSEMBLIES OF LASER SYSTEMS		0	0	0	0	0	0
T1195 T2-10 DO YOU REMOVE OR REPLACE COMPONENT PARTS OF LASER SYSTEMS		0	0	0	0	0	0
T1196 T2-11 DO YOU USE OR REFER TO ANGSTROMS (A)		0	0	2	0	0	0
T1197 T2-12 DO YOU USE OR REFER TO ELECTRON ENERGY LEVELS		0	0	0	0	0	0
T1198 T2-13 DO YOU USE OR REFER TO GROUND STATE		0	0	0	0	0	0
T1199 T2-14 DO YOU USE OR REFER TO EXCITED STATE		0	0	0	0	0	0
T1200 T2-15 DO YOU USE OR REFER TO PACKET OF RADIATION		0	0	0	0	0	0
T1201 T2-16 DO YOU USE OR REFER TO PHOTONS		0	0	0	0	0	0
T1202 T2-17 DO YOU USE OR REFER TO SPONTANEOUS EMISSION		0	0	0	0	0	0
T1203 T2-18 DO YOU USE OR REFER TO STIMULATED EMISSION		0	0	0	0	0	0
T1204 T2-19 DO YOU USE OR REFER TO COHERENCE OR INCOHERENCE		0	1	0	1	0	0
T1205 T2-20 DO YOU USE OR REFER TO INVERSION LEVEL		0	0	0	0	0	0
T1206 T2-21 DO YOU USE OR REFER TO MONOCHROMATIC		0	0	0	0	0	0
T1207 T2-22 DO YOU WORK WITH ACTIVE MATERIALS		0	0	0	0	0	0
T1208 T2-23 DO YOU WORK WITH PUMPING SOURCES		0	0	0	0	0	0
T1209 T2-24 DO YOU WORK WITH FULL SILVERED (100% REFLECTIVE) MIRRORS		0	0	0	0	0	0
T1210 T2-25 DO YOU WORK WITH HALF SILVERED (92% REFLECTIVE) MIRRORS		0	0	0	0	0	0
T1211 T2-26 DO YOU WORK WITH HELICAL FLASHTUBES		0	0	0	0	0	0
T1212 T2-27 DO YOU WORK WITH RUBY		0	0	0	0	0	0
T1213 T2-28 DO YOU WORK WITH HELIUM-NEON		0	0	0	0	0	0
T1214 T2-29 DO YOU WORK WITH HELIUM-XENON		0	0	0	0	0	0
T1215 T2-30 DO YOU WORK WITH XENON		0	0	0	0	0	0
T1216 T2-31 DO YOU WORK WITH CESIUM-HELIUM		0	0	0	0	0	0
T1217 T2-32 DO YOU WORK WITH ARGON		0	0	0	0	0	0
T1218 T2-33 DO YOU WORK WITH NEODYMIUM IN GLASS		0	0	0	0	0	0
T1219 T2-34 DO YOU WORK WITH GALLIUM ARSENIDE		0	0	0	0	0	0
T1220 T3-01 IN YOUR PRESENT JOB DO YOU WORK WITH DISPLAY TUBES, SUCH AS DIRECT VIEW STORAGE (DVST) OR MULTIPLE MODE		4	4	2	4	4	0
T1221 T3-02 DO YOU INSPECT DVST OR HMST		3	3	0	2	4	0
T1222 T3-03 DO YOU CLEAN DVST OR HMST		2	3	0	2	3	0
T1223 T3-04 DO YOU ADJUST OR CALIBRATE DVST OR HMST		2	2	2	2	3	0
T1224 T3-05 DO YOU OPERATE SYSTEMS THAT CONTAIN DVST OR HMST		4	4	2	5	4	0
T1225 T3-06 DO YOU TROUBLESHOOT DVST OR HMST		2	2	0	2	2	0
CIRCUITS							
T1226 T3-07 DO YOU REMOVE OR REPLACE DVST OR HMST TUBES FROM MAJOR ASSEMBLIES OR UNITS		2	2	2	2	2	0
T1227 T3-08 DO YOU PERFORM TASKS THAT MAKE IT NECESSARY TO NAME THE VARIOUS ELEMENTS OF DVST		1	1	2	1	1	0

TASK GROUP SUMMARY
PERCENT MEMBERS PERFORMING

SPC	SPC	SPC	SPC	SPC	SPC
001	002	003	004	005	006

DY-TSK

T1228 T3-09 DO YOU PERFORM TASKS THAT MAKE IT NECESSARY TO NAME
THE VARIOUS ELEMENTS OF HMST

T1229 T3-10 DO YOU PERFORM TASKS ON FLOOD GUNS

T1230 T3-11 DO YOU PERFORM TASKS ON WRITE GUNS

T1231 T3-12 DO YOU PERFORM TASKS ON ATTACK GUNS

T1232 T3-13 DO YOU PERFORM TASKS ON ERASE GUNS

T1233 T3-14 DO YOU PERFORM TASKS ON STORAGE GRIDS

U1234 U1-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY PROGRAMMING

TASKS

U1235 U1-02 DO YOU USE OR REFER TO DECIMAL SYSTEMS

U1236 U1-03 DO YOU USE OR REFER TO PROGRAMS

U1237 U1-04 DO YOU USE OR REFER TO HEXIDECIMAL SYSTEMS

U1238 U1-05 DO YOU USE OR REFER TO 8-4-2-1 SYSTEMS

U1239 U1-06 DO YOU USE OR REFER TO FOUR SYSTEMS

U1240 U1-07 DO YOU USE OR REFER TO BINARY SYSTEMS

U1241 U1-08 DO YOU USE OR REFER TO TIME-SHARING

U1242 U1-09 DO YOU USE OR REFER TO DATA WORDS

U1243 U1-10 DO YOU USE OR REFER TO ADDRESS WORDS

U1244 U1-11 DO YOU USE OR REFER TO ADDRESS/SUBADDRESS

U1245 U1-12 DO YOU USE OR REFER TO STEERING/INFORMATION

U1246 U1-13 DO YOU USE OR REFER TO INFORMATION WORDS

U1247 U1-14 DO YOU PERFORM TASKS ON SINGLE LEVEL PROGRAMMING

U1248 U1-15 DO YOU PERFORM TASKS ON MULTI-LEVEL PROGRAMMING

U1249 U1-16 DO YOU PERFORM TASKS ON INPUT DEVICES

U1250 U1-17 DO YOU PERFORM TASKS ON STORAGE DEVICES

U1251 U1-18 DO YOU PERFORM TASKS ON ARITHMETIC SECTIONS

U1252 U1-19 DO YOU PERFORM TASKS ON CONTROL SECTIONS

U1253 U1-20 DO YOU PERFORM TASKS ON OUTPUT DEVICES

U1254 U1-21 DO YOU PERFORM TASKS ON POWER SUPPLIES

U1255 U2-01 DO YOU USE DECIBELS TO EXPRESS AMPLIFICATION AND

ATTENUATION

U1256 U2-02 DO YOU USE LOGARITHMS TO COMPUTE OUTPUT POWER IN

DECIBELS

U1257 U2-03 DO YOU USE LOGARITHMS TO COMPUTE ATTENUATION IN

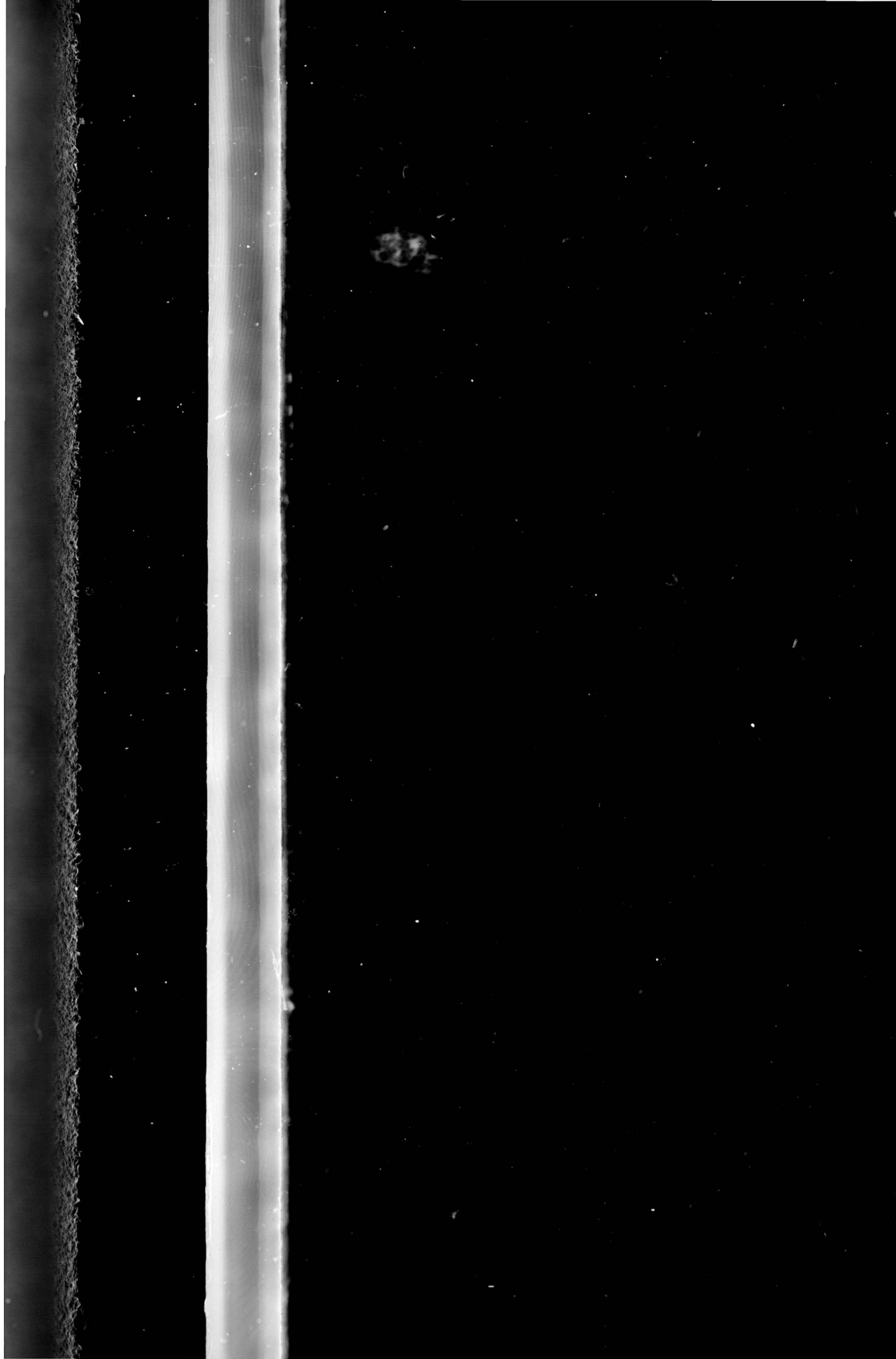
DECIBELS

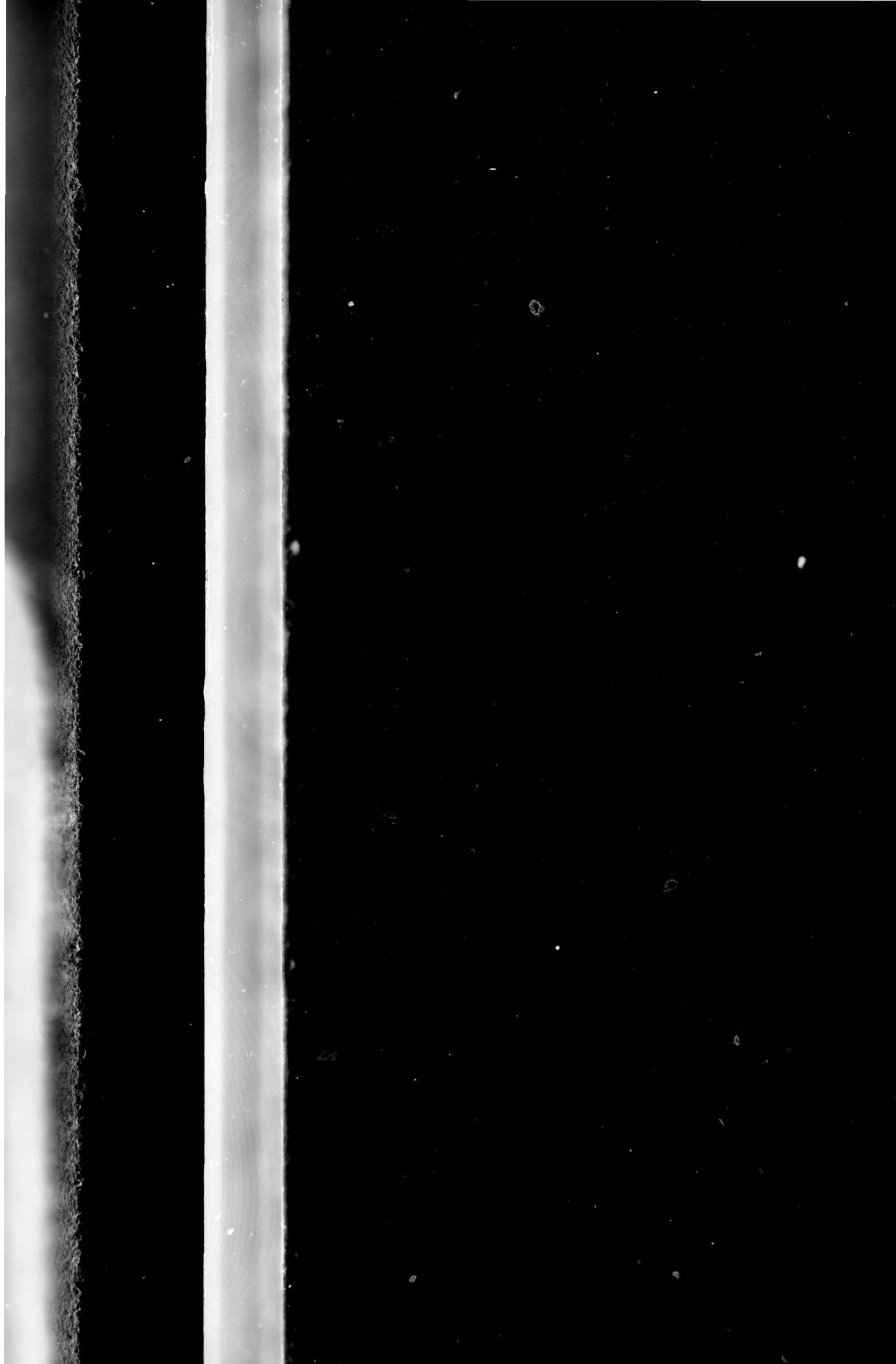
U1258 A DUMMY TASK WHICH ALLOWS THOSE INCUMBENTS REPORTING

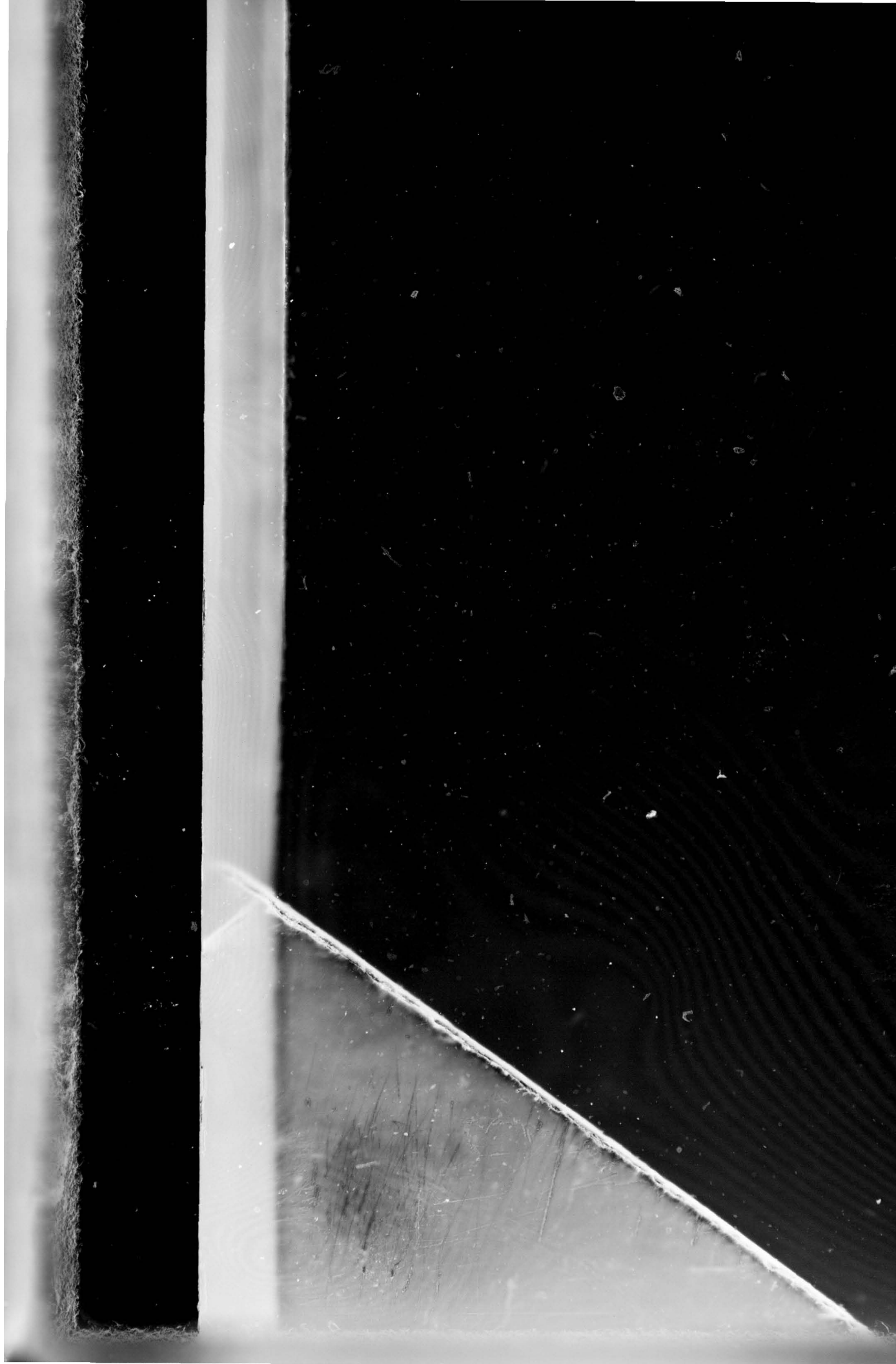
NO TASKS PERFORMED TO BE RETAINED FOR OTHER

PROGRAMMING

DB AND POWER RATIOS







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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This report summarizes the results of the administration of the Electronic Principles Inventory to airmen assigned to Electronic Warfare Systems Specialty (AFSC 328X3). The report gives a detailed listing of the technical tasks and knowledge needed to perform the jobs within the specialty or career ladder.		

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→ This specialty has the following functions:

Installs, maintains, and repairs avionic electronic warfare equipment, ground electronic intercept and analysis equipment, and special purpose test equipment. Performs preventive maintenance on avionics electronic warfare and ground intercept and analysis equipment. Maintains inspection and maintenance records. Supervises electronic warfare systems maintenance personnel.

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